

efficient Cause of the Incarnation, either considered with Regard to its Substance or to its Circumstances?

Note, That previously to the answering this Question, we must observe, 1. That the Incarnation may be consider'd in two Manners; first, with Regard to the Substance or Entity which consists in the hypostatical Union of the human Nature, with the Person of the Word. Secondly, with Regard to some of its Circumstances, v. g. of the Place, or of Time, or of the Persons from whom the Flesh of Christ proceeded. 2. That it is not asked here, if the Incarnation, as well consider'd with Regard to its Substance, as to its Circumstances, can fall under Merit. These pre-observ'd,

I answer, *that neither Christ, nor any pure Creature, let him be ever so holy, has merited, in any Manner, the Incarnation, consider'd with Regard to its Substance and Entity.* Christ could not deserve it, since the Principle of Merit, does not fall under Merit. A Creature could not deserve it, since the Value of the Incarnation is infinite, and of an Order superior to all the created Goods, the Value thereof is always finite.

From the efficient Cause of the Incarnation, we'll pass to the final, asking first, *Which is the final Cause of the Incarnation, either general or particular?*

Note, That we must observe previously to an Answer to this Question, that the End of the Incarnation can be considered in two Manners, viz. either as general, or common to itself, and to several other good Works, or as particular. These pre-observ'd,

I answer, 1. *That the general End of the Mystery of the Incarnation, is the Glory of God, and the Manifestation of his Goodness:* Which seems to be insinuated by the Scripture; for it is said, *Prov. xvi. That God has operated all Things for himself.*

By this Mystery God's Goodness is also manifested in a marvellous Manner; in that he has thereby delivered the human Race, from the Miseries which were the fatal Consequences of the Original Sin.

The particular End of the Mystery of the Incarnation, was *Man's Deliverance from Sin and Misery.* Which I prove by the Scripture, the Fathers, and the Councils.

By the Scripture, *John iii. God has sent his Son into the World, that the World may be saved by him.* And *Gal. iv. When the Plenitude of Time came, God sent his Son made of a Woman, made under the Law, to save those who were under the Law.* Whereby it appears, that Man's Redemption was the final Cause of the Mystery of the Incarnation.

By the Councils, particularly that of Nice, where it is said, that the Son of God descended from Heaven for our Salvation.

By the Fathers, particularly St. Bernard, *Epist. 190. against Abailardus.* *If it is true to say that Christ did not come to save the human Race, but only to reform Manners, and to recommend Love and Charity (which is Abailard's Opinion) in that Manner he joins with Pelagius, to render the Price of the Blood of Jesus Christ, of no Effect.*

But one of the greatest and most important Questions on this Subject is, *If the Incarnation had been accomplished, if Adam had not sinned?*

Note, That to understand this Question well, we must know, 1. That it is not asked here, if God could if he would, have been incarnated, though Adam had not sinned; since no Body questions it. For, could he not apply the Work of the Incarnation to some other particular End, than is the Remedy of Sin? Who can say, that in that Case, the Incarnation had been needless? 2. That it is only asked here, if in fact Christ had come, if Man had never sinned? Our Question being of the Fact, not of the Possibility. These pre-observ'd,

I answer, that the particular, entire, and principal End of the Incarnation, was the Remedy of Sin and Man's Redemption. Which I prove both by the Scripture and the Fathers.

By the Scripture, *Matt. ix. I am not come to call the*

Righteous, but Sinners to Repentance. *John iii. God has not sent his Son to judge the World, but that the World may be saved by him.*

By the Fathers, especially St. Irenæus, *lib. 5. advers. Hæres. c. 14.* *If the Flesh had not been to be saved, the Word of God had not been made Flesh.* St. Athanasius, *Orat. 3. cont. Arian.* *It had never happen'd that the Word had been made Flesh, if Man's Necessity had not requir'd it.* And St. Augustin, in several Places, particularly in his Sermon on Psalm xxxvii. where explaining these Words of the Psalmist, *The Steps of a good Man are order'd by the Lord,* speaks thus, *If thou Man would not dismiss God, God would not become a Man for thee.*

Our next Question is, *If God is come rather for the Reparation of the original, than of the actual Sin?*

Note, That it is not asked in this Place, if Christ is come only to take off the original Sin, and not the actual; since it is very certain that he came to take off both. For we read, *Tit. ii. That he has given himself for us to redeem us from all Iniquity;* but if he is come more particularly for the original, than for the actual Sin?

I answer, *that Christ is come more particularly for the original Sin, than for the actual;* though he came, as we have already observed, to deliver Man from all Sin, as well actual as original. Because he is come chiefly to repair that which was the greater, if not intensively, at least extensively; but as the original Sin is greater than the actual, since by such a Sin, Adam has rendered all his Descendants Enemies of God, Sons of Wrath, and unworthy of eternal Life; therefore it was much more convenient that Christ should come to blot out the original Sin which was common to the whole human Race, than for the actual Sin, which is not common to the whole human Society.

Notwithstanding that there is but one original Sin, and the actual Sins of Men, are without Number. Because as Sin, in our Hypothesis, is more extensively considered; we are not to have Regard to the Number of Sins; but to the Number of Subjects affected by Sin; but there is a greater Number of Subjects affected by the original, than by the actual Sin; therefore the original Sin is to be considered greater extensively.

If I be asked, *Whether Christ had come, if Adam had not sinned, but only his Posterity?* I'll answer, that there are various Sentiments on this Subject; for some Doctors imagine, that it is very probable Christ had come, though Adam had not sinned, to blot out the actual mortal Sins, if they had been committed by the Majority of Men; because it is very agreeable to his infinite Goodness, that he should not leave in the Mass of Corruption, those he had created for an eternal Felicity. Others more probably are of Opinion, that without the original Sin, Christ had not come for the actual Sins only, especially if we consider the Force of the present Decree; because there had not been so many Men infected with the actual Sin, as there have been infected with the original; and confirm their Opinion by the Example of the Angels, and say that Christ is not come for them, because they had not all sinned.

We'll ask next, *If there be two Natures in Christ, viz. the divine and the human; and if they be in him, without Confusion?*

I answer to the first Part of the Question, *that there are two Natures in Christ, viz. the divine and the human, for which Reason, Christ is a true God and a true Man.*

This I prove by the Scripture, and the Councils.

By the Scripture, which gives to Christ those two Natures, and the Properties of both. Mention is made of the divine in several Places, but most particularly where Jesus Christ himself says, *I and the Father are one,* and consequently equal with the Father; which cannot be understood of the Humanity, since *John xiv.* he says, that by Reason of his Humanity he is inferior to the Father: *The Father,* says he, *is greater than me:* Therefore this must be understood, by Reason of the Divinity which belongs to him properly and not metaphorically. Likewise *John xx.* where we read, that Thomas having seen and felt Christ, said, *My Lord, and my God,* which

which Confession was not reproved by Christ; but rather Christ answered him, *Because thou hast seen me, Thomas, thou hast believed.* And Phil. ii. *Who being in the Form of God, thought it no Robbery to be equal with God.* It is plain, likewise, of the human Nature, from all those Places where Christ is said to be born, that he has suffer'd, and is dead: And is called the Son of Man, and the Son of *David*, according to the Flesh; and from those, where the Parts and Properties of human Nature are attributed to Christ. As is in those Places where he is said to have *a sorrowful Soul*, Mark xiv. to have *Flesh and Blood*, Heb. i. to be *hungry, thirsty, to be fatigued.*

I prove it by the Councils, particularly that of *Chalcedon*, assembled against *Eutyches*, *Act. 5.* where they define, and confess Christ to be the same Perfect in the Divinity, and the same Perfect in the Humanity, truly God, and truly Man, the same of a rational Soul and Body, consubstantial to his Father according to his Divinity, and consubstantial to us according to his Humanity.

I prove it likewise by the Symbols, particularly that of *St. Athanasius*; *Therefore it is the right Faith*, says he, *that we should believe and confess that our Lord Jesus Christ is the Son of God, a perfect Man, subsisting of a rational Soul and a human Flesh.*

Notwithstanding, 1. These Words we read Phil. ii. where it is said, *That Christ was made in the Resemblance of Men, and found in Fashion as a Man*; because those Words do not import, that Christ was not a Man simply, but that he was not a Man Sinner, though he had took upon him the Form and Similitude of a Sinner.

Notwithstanding, 2. That Christ is said to be a celestial Man from Heaven; for he is not called thus, because he had took his Body from Heaven, or a Body different from ours; but either because he is begotten from all Eternity by his divine Father without a Mother; or because in Time he is begotten from a Mother without Father, by the Overshadowing of the Holy Ghost.

I answer to the second Part of the Question, *that the two aforesaid Natures, that I say to be substantially in Christ, are entire, perfect, and without Confusion.* Because this important Truth has been defined by the Council of *Chalcedon*, and by the following Councils who have subscribed to it.

From this Answer it follows, that there is not one only Nature in Christ, into which the other has been converted, or which results from the Composition of both Natures; notwithstanding that the Word is said to be made Flesh, *John i.* because he was made Flesh, not by changing what he was, but by taking what he was not (to speak the Language of *St. Gregory*) for the Word has not been made Flesh, by a Conversion of himself into Flesh, but by the Union of himself with the Flesh. For the Term *was made*, is not taken in the same Manner here, as it is to be taken, Chap. ii. where it is said, that Water was made Wine, for such Expression signifies sometimes a Mutation made, and sometimes only a Susception; as *Gal. iii.* where Christ is said, *made a Malediction for us*, because he has taken upon him a Malediction for our Sake.

Our next Question is, *Whether there be but one Person in which the hypostatical Union was made, and whether that Person is the Person of the Word?*

I answer to the first Part of this Question, *that there is but one Person in Christ, in which the hypostatical Union was made*; which I prove by the Scripture, the Councils, the Fathers, and by Reason.

By the Scripture, where it is said, *That Christ is God, and the Son of God; and likewise Man, and the Son of Man*; whence it is inferred that there is but one Person.

By the Councils, particularly those of *Ephesus*, *Chalcedon*, and the fifth of *Constantinople*, *can. 4.* and likewise by all the Symbols, but more particularly by that of the Apostles, where the only Son of God is said to be *born of the Virgin Mary*; and by that of *St. Athanasius*, where it is said, *that though Christ be God and Man, notwithstanding there are not two, but only one Christ; one, not by Confusion of Substance, but by the Unity of Person.*

I prove it by the Fathers, particularly *St. John Damascenus*, *lib. 3. c. 3, 4, 5.* in our Lord Jesus Christ, says he, *we acknowledge two Natures, and but one hypostasis.*

I prove it by Reason, because in Christ the Divinity and Humanity constitute one whole, without being, notwithstanding, joined by a real Identity, whereby one is converted into the other, or by the Union of a Compartment with its Compartment; or by an accidental Union. The first is proved by what I have already said. The second is also evident, because the Divinity cannot have the Ratio of a Part, properly so called. The third is likewise certain, because there is no accidental Union between the divine Nature and the human. Therefore it remains, that the Divinity, or the divine Nature, and the human, are united substantially personally, *i. e.* in one and the same Person. Add that the other aforesaid Unions, are not proper or particular to Christ, since they are common to all the Just. But the Union of the Word with the Humanity, must be so proper, as to be convenient to no Body else.

I answer to the second Part of the Question; that *that only Person which is in Christ, is the Person of the divine Word.* Because the Scripture teaches it in several Places, or at least insinuates it, *v. g.* *John xv.* where Christ is called *The only Son of God.* But if I be asked, *Why that only Person which is in Christ be not the human Person?* I'll answer that the Reason is, that if it was so, the divine Nature should be terminated by the human; which cannot be; therefore it must be no other Person, than the Person of the divine Word.

We'll ask next, *If besides the divine and human Nature, and the Personality of the Word which are in Christ, there is some other Thing in him, distinct from them: Whether, v. gr. there is an Union, and that Union be a modal Entity.* — Here I'll explain some of the Things relating to an hypostatical Union.

To this I answer, *that in Christ, besides the Divinity and Humanity, there is no other substantial Entity, distinct from the Personality of the Word join'd together, which could be a formal Term of the unitive Action of the Humanity with the Word, nor any modal Entity.* Because in the sixth general Council, *act. 18.* it is said, that Christ is no other Thing than the Divinity and the Humanity; therefore besides the Person of the Word, and the Humanity, Christ does not include substantially other Entities; whence consequently that modal Entity, admitted by some, unitive of the Humanity with the Word, and distinct from both, seems fictitious; for it would be multiplying Beings without Necessity; since the Personality of the Word, and the Humanity, are united to one another immediately, to constitute Christ; as the Soul and the Body are united together to constitute a Man.

It may be objected to this, 1. That what is passively indifferent to Union, or is indifferent towards being united to this or that, must be determined by something super-added, in order to its being united, and to be united with this rather than with the other; but the human Nature of Christ was indifferent, as to its being united; or as to its being united either with the Person of the Father, or of the Son, or of the Holy Ghost; therefore it must have been determined by something super-added; but nothing can be imagined super-added, besides the aforesaid substantial Manner, therefore, &c.

I answer, that these Extrems uniting themselves to one another, have no Need of such super-added. Besides, if for the Reason alledged in the Objection, the Humanity of Christ was determined by something super-added, in order for its Union; it should be said, likewise, that the divine Word was determined by some super-added Entity, because he was no less indifferent of himself to his Union with the Humanity, or to his Union with this or that, than the Humanity was indifferent to the Union, or to be united with the Person of the Father, or of the Son, or of the Holy Ghost. But it cannot be said, that the divine Word was determined by some super-added Entity to his Union with the human Nature: Therefore, &c.

It is objected, 2. That every Act has a Term; and the Union being an Act, it must have a Term; but such a Term

a Term in the *Incarnation* is not the Word, nor the Body or the Soul of Christ; therefore it is something distinct from them, which can be nothing else but the aforesaid modal Entity: Therefore, &c.

It is true, that an Action must have something either produced a-new or composed; but not always something produced a-new; and that must be understood of a productive Action, not of a terminative.

Our next Question is, *If Christ resulting from the Person of the Word and the Humanity united together, can be said composed of a Composition, properly so called, and whether the Person of the Word and the Humanity have in him, the Ratio of Parts properly said? And what we must think of the Person of Christ, whether it is composed?*

Note, I. That it is not so much a Question here of Christ, but of the Person of Christ, which may be considered in three Manners. 1. *In abstracto*, viz. inasmuch as it is taken for the sole Personality of the Word. 2. *In concreto*, but notwithstanding only as it terminates the divine Nature. 3. *In concreto*, as it affects the divine and the human.—II. By the Name of Composition is understood the Union of several Things distinct. But we commonly distinguish two Sorts of Composition; the first is that which has Parts properly said, i. e. ordain'd of themselves towards constituting some *totum*, and having a mutual Dependence on one another. The last is, that which has no Parts properly said; whence it is in the Manner of a Number, which is a Collection of several Units. These pre-observed,

My first Answer to the Question is, *that Christ is truly composed.* Which I prove by the Councils, the Fathers, and by Reason.

By the Councils, particularly the second of *Constantinople*, *Collat. 8. can. 4.* likewise *can. 7.* Christ, say they, has two Natures, of which he is composed. This Canon was approved in the third of *Constantinople*, *Aët. 4.*

By the Fathers, particularly *St. Dennis*, *de divin. nom. c. 1.* where he speaks thus of God. *In one of their Persons, he has took entirely and truly our Infirmities, calling and uniting to himself our Humanity, whereof the simple Jesus is ineffably composed, and the Eternal has undergone temporal Motions.*

By Reason, because in Christ are found those Things which are requir'd, and suffice for a Composition. 1. A real Distinction between the Things compounding; for are not the Nature and the divine Person, distinguished really from the Humanity? 2. A second real Union to be, and not only according to some local Presence, or Place; for who can be ignorant, that the Things compounding in Christ, are united according to the personal Being? 3. That one of the Compoundings be as the *Aët*, and the other as the Power: And are not the Things compounding, in that Manner, in Christ? For is not the Person of the Word, in Christ, in the Manner of an *Aët*, not informing, but terminating and perfecting the Nature taken? And is not the Humanity, in the Manner of a Power, terminable by the Person of the Word, in the Ratio of the Person? Therefore, &c.

It is objected, 1. That if Christ was truly composed, the Compoundings would be truly Parts; but the Nature or divine Person ought not, nor can have the Ratio of a Part, since a Part includes Imperfections: Therefore Christ is not truly composed.

I answer, that for a true Composition, it is not necessary, that the Compoundings should have the Ratio of Parts, but it suffices, that they should have the three Conditions above-mentioned, viz. that they be really distinguished from one another, that they be united, and that they have the Ratio of *Aët* and Power. It is certain, according to *St. Augustin*, *lib. 3. cont. Maximin. c. 16.* *That God cannot have the Ratio of a Part.*

Notwithstanding what some Fathers say, that the Divinity and Humanity are Parts in Christ; for they must be only understood of Parts improperly said; for they have said it only in that Sense, and to signify against *Eutyches*, that both Natures have remain'd immutable, and without Confusion in Christ. And that one

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has not been changed into the other, nor both into a third. For all Parts retain their Nature in the whole, and is not corrupted by the Society and Union of the other.

It is objected, 2. That if Christ was composed, it would follow, that he would be more perfect in the Ratio of the Composite, than either of the Compoundings separately taken; but that cannot be said: Otherwise the Person of the Word would not be infinitely perfect; since it would be supposed to have something more perfect, viz. Christ himself in the Ratio of the Composite: Therefore, &c.

I answer, that he would be more perfect extensively, but not intensively. That he would be more perfect extensively, appears from that he would have several Perfections: That he would not be more perfect intensively, is evident, from that the Perfection of the Creature, would be contained in God, either formally or eminently.

My second Answer is, *that the Person of Christ taken in abstracto, for the sole Personality of the Word, can in no Manner be said composite.* Because the divine Person, thus consider'd, is very simple; as I have shew'd in my *Treatise of God's Attributes.*

My third Answer is, *that the Person of Christ, consider'd only as it terminates the divine Nature, is in no Manner composed:* Because there is no Composition in God from the Nature and the Personality; because the Personality is identified to the divine Nature.

My fourth Answer is, *that the Person of Christ considered as it terminates the human Nature, or as it terminates the divine and human together, can be said composed, but not of an absolute Composition in itself, but, as they speak, of a Composition from those, and of a relative Composition and with those.*

I prove the first Part of this Answer, viz. *that the Person of Christ consider'd as terminating human Nature, or as terminating the divine and human together, can be said composed.* Because Christ is said truly composed; for what is Christ but the Person of the Word, terminating the human Nature, or the Word made Flesh? Therefore, &c.

I prove the second Part, viz. *that that Composition is not absolute in itself;* because it does not import Parts properly said.

I prove the third Part, viz. *that that Composition is only relative;* because it is not by Reason of the Parts, but by Reason of the Number.

Note, That from this I'll pass to the hypostatical Union, asking first,

If one divine Person can take a created Nature, hypostatically, without the other Persons taking it likewise?

Which I answer in the Affirmative; and which Truth is confirmed by the Scripture, where the Word alone is said to have been made Flesh, *John i.* and likewise by the Symbols, and the Councils, acting against the *Patripatians*, who pretended, that the Father had been made Man, and had suffer'd for us; particularly that of *Toledo*, in his Confession of Faith.

We must ask next, *What the Word has took in the Incarnation?* And, 1. *If he has took in fact the human Nature, and not the Nature either superior or inferior?*

I answer to the first Part of the last Question, that the Word has took in fact the human Nature, because we read, *John i. The Word is made Flesh.*

I answer to the second Part, that the Word has neither took the superior nor the inferior Nature; because by the *superior Nature* is understood the *angelical*, and by the *inferior*, the *sensitive, vegetative, or unanimated.* But he has took neither of them, since the Apostle in the Epistle to the *Hebrews*, Chap. ii. says expressly, that he has taken the Seed of *Abraham*, not the Angels.

If it be asked here, *Whether the Humanity taken by the Word, was of the Race of Adam, our first Parent?* I'll answer in the Affirmative, because the Scripture innuates it, *Luke iii.* carrying Christ's Generation from that same first Parent, through a long Series of Generations. God could create then a Man who had not descended from *Adam*, but would not, as *St. Augustin* teaches it, *lib. 13. de Trinit. c. 18.*

If it be asked next, *If by taking that human Nature*

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from Adam's Race, he has took it vitiated with Sin? I'll answer in the Negative, because he has not taken it thro' the seminal Way.

Note, That the Word, by taking the human Nature, has immediately taken a Soul, and with it Understanding and Will: He has immediately taken, likewise, a true Body, and not a phantastical one; and all, and every one of its Parts, especially the principal.

I prove the first Part of this Proposition, *viz. that he has immediately took a Soul*; because the Word in taking the Humanity, has immediately took that, without which there can be no true Man; for there can be no true Man without a rational Soul; therefore he immediately took a Soul. Which is sufficiently confirmed by these Words of Christ, *Matt. xxvi. My Soul is exceeding sorrowful, even to Death.* Notwithstanding what is said, *John i. The Word is made Flesh*, without making any Mention of the Soul, since by the Name *Flesh*, Man is often understood in the Scripture, according to *St. Augustin, lib. 33. quest. 9, 80.* and *St. Fulgentius, lib. 1. ad Trasim. c. 17.*

I have said, and *with the Soul Understanding and Will.* Because the Word has taken a Soul like ours; therefore he has took Understanding and Will, which are the natural Faculties of that Soul.

I prove the second Part of my Proposition, *viz. that the Word has immediately taken a true human Body.* Because we read, *John i. That the Word was made Flesh.* And *Luke*, the last Chapter, Christ speaks thus of his Body. *Handle me, and see, for a Spirit has not Flesh and Bones, as you see me have.* And because the Councils, and the Fathers insinuate the same, when they say, that Christ is a true Man, born of the Virgin Mary, and consubstantial to us. By this it is plainly seen, how grossly some Hereticks erred, who pretended to believe, that the Body of Christ was phantastical, or celestial; against whom *St. Augustin, lib. 83. quest. 9, 14.* speaks thus, *if the Body of Christ was phantastical, then Christ has deceived us; and if he has deceived us, there is no Truth: But Christ is Truth; therefore the Body of Christ is not a Phantom; otherwise it should be said, that his Nativity of the Virgin, his Passion, Death, and Resurrection, had been something phantastical and imaginary; but who can say such a Thing without Heresy and Impiety? For if Christ is not truly risen from the Dead, but his Resurrection, as well as his Death is imaginary; therefore his Predication and our Faith will be vain* (says the Apostle, *1 Cor. xv.*) *and Christ's a perpetual Fiction, and a continual Illusion and Deceit.*

I prove the third Part, *viz. that the Word has taken immediately, all, and every one of the Parts of the human Body, as well the essential, as those which are called integrant.* Because Christ in the Scripture, and in the Councils, and likewise by the Fathers, particularly by *St. Athanasius*, in his Symbol, is called a perfect Man; which could not be, if he had not took all the afore-said Parts: Therefore, &c.

I may be asked here, *If Christ had taken some of the Defects of the human Body?* To which I answer, that he had took those Defects, which are common to all Men, such as Thirst, Hunger, Pain, Weariness, Death, &c. but not those which proceed from some particular Causes, and are only in some Men, as the Leprosy, Fever, &c.

I prove the first Part, *viz. that he had taken some Defects common to all Men, and inseparable from human Nature*; (and this against the Severians, who denied the Passibility of Christ's Body) by the Scripture, the Councils, and the Fathers.

By the Scripture, *Isaiah liii. Surely he has borne our Griefs, and carried our Sorrows; he was wounded for our Transgressions.* *Luke xxii. For it was necessary that Christ should suffer, and thus enter into his Glory.*

By the Councils, particularly that of *Ephesus, Ana. 12.* that of *Chalcedon, Act. 5.* that of *Lateran*, under *Martin V. can. 4.*

By the Fathers, particularly *St. Cyril of Jerusalem, Catech. 13.* in these Words; *Jesus has truly suffered for Men: For the Cross, is not an Appearance, nor the Redemption an Opinion; his Death is not imaginary, nor our Salvation fabulous; he was surely crucified; and*

we are not confounded nor deny it; but we glory in him. The other Fathers are of the same Sentiment, particularly *St. Ambrose, lib. 2. de fide, c. 4.* *St. Augustin, Epist. 46.* and *St. Leo, Epist. 10.*

I prove the second Part of my Answer, *viz. that he has not taken all the Imperfections which proceed from some particular Causes, such as some Deformities of the Body and Maladies, the Root whereof is Sin.* Because there was no Sin in him.

It may be asked, *If Christ took some Defects of the Soul, such as Sin, Ignorance, and the Passions of the inferior Appetite?*

I answer, *that Christ was never infected, nor could be infected either with the original or actual Sin.* That he was never infected with Sin, I prove by the Scripture, the Councils, and the Fathers.

By the Scripture, *1 Pet. ii.* where it is said of Christ; *That he did no Sin, neither was Guile found in his Mouth.* *Heb. iv. That he was in all Points tempted as we are, yet without Sin.* And *Chap. vii.* he is called *holy, harmless, undefiled, separate from Sinners, &c.*

By the Councils, particularly that of *Ephesus, c. 10.* and that of *Lateran*, under *Martin I. consul. 5. can. 5.*

By the Fathers, particularly *St. Cyril of Alexandria*, in his Book against the *Antropomorphites, c. 23.* calls those Fools, who affirmed that Christ could sin; if he could not sin, therefore he has not sinned.

Notwithstanding these Words, attributed by the Psalmist to Christ's Suffering, *Psalms xxii. My God, my God, why hast thou forsaken me? Why art thou so far from helping me, and from the Words of my Sins?* For two Reasons, 1. Because Christ does not use these Words in his Person, but in that of his Members, *viz. Men.* 2. Because in that Place he calls our Sins his, because he had rendered himself Sponsor for them, and as such was to satisfy the divine Justice, to the utmost Rigour, as *St. Ambrose, lib. de Incarnat. Domin. Sacrament. c. 5.* *St. Jerom, in Psalm xxii.* and *St. Augustin*, on the same Psalm, teach it.

And that Christ could not be affected with Sin, but was rather impeccable, appears from the Fathers, particularly *St. Athanasius, lib. de Incarnat.* where he speaks thus, *The Incarnation of the Word being deified, could not be susceptible of our Sins.* And this Impeccability of Christ, proceeded from three Causes, and was founded, 1. On the Union of the Humanity with the divine Person, whose Holiness is infinite; whence it is not surprising, if Christ's Will, which was entirely deified, was not contrary to God. 2. That Impeccability was founded, and existed from the beatific Vision of Christ, which is incompatible with Sin. 3. From that consummate Grace, the Soul of Christ had, and which was far greater, than that the Angels and the Blessed have.

I answer, 2. That the Leaven of Sin was not taken by Christ; because that Leaven proceeds from the Original Sin, which was not, and could not be in him.

I answer, 3. That Christ did not take Ignorance, because Christ knew all Things, according to *St. Peter*, who says, *John xxi. Lord thou knowest all Things.* Which is not surprising, since we read, *John i. That he was full of Grace and Truth.* And *Col. ii. In him were all the Treasures of the Wisdom and Science of God.* Therefore in the sixth general Council, was approved the Letter of *Sophronius*, in which was condemned the Heresy of the *Agnoites*, who pretended that Christ knew nothing of the Day of Judgment.

Notwithstanding these Words, *Luke ii.* where it is said, *that Christ increased in Age and Wisdom*; because we can only conclude from these Words, that he discovered by degrees more and more his Wisdom to Men, or that he increased in Experience, or experimental Knowledge, but not that his Wisdom received any Increase, since he was full of it from the first Instant of his Conception.

I answer, 4. That the Soul of Christ has been truly passible, in this Sense, that it could be moved by those Affections which are called Passions in us; but however with these three Differences; the first whereof is taken from the Part of the Principle, from that those Affections in Christ were governed by Reason, and in us they often change the Deliberation of our Reason. 2. From the

the Part of the Object, from that Christ's Affections had always an Object agreeable to right Reason; and our Passions have often an Object repugnant to Reason. 3. From the Part of the Effect, because Christ's Reason has never been obstructed by Passions; and ours, is either obstructed by Passions, or entirely silenced.

Our next Question is, if the hypostatical Union of the Humanity with the divine Word, be accidental or substantial? To which I answer (against Nestorius who considered that Union as accidental only) *that it is substantial, and not accidental*; because where two Natures formally distinct from one another, predicate, *in concreto*, of one another, there must be necessarily a substantial Union in the Supposite; but in Christ there are two Natures formally distinct from one another, which predicate of one another *in concreto*, for Christ is God and Man, since *the Word is made Flesh*, John i. Therefore the Union is substantial, and cannot produce an accidental Union, such as the Union of Amity between two Persons, let the Amity be ever so great, since by it Peter cannot be said to be Paul, and Vicissim; but it is easily conceived, that by the hypostatical Union made in the Person of the Word, God is Man, and Man God.

This is confirmed, 1. By the Manner of speaking of the Councils, particularly that of *Ephesus*, in the second Anathema, of the Twelve published by St. Cyril and approved by the Council, expressed in these Terms; *If any Body does not confess that the Word of God the Father, united to the Flesh by Hypostasis, is one Christ with a proper Flesh, and the same is together God and Man, let him be Anathema*. And by the Council of *Chalcedon*, in the Confession of Faith, *Art. 5.* and the second of *Constantinople*, *Collat. 8.*

It is confirmed, 2. By the Manner of speaking of the ancient Fathers, some of whom call this Union substantial, as St. Gregory Nazianzen, *Epist. ad Cledon.* and St. Damascenus, *lib. 3. de fid. c. 3.* But others call this Union according to the Hypostasis, as St. Cyril, *epist. 2. ad Nestor.* which was approved by the Council of *Ephesus*.

It may be objected, that between a principal Cause and its Instrument there is only an accidental Union; and that Christ's Flesh being only the Instrument of the Word or Divinity, as St. John Damascenus, *lib. 3. de fid. c. 15.* seems to insinuate; therefore, &c.

To which I answer, that it is true that the Union is only accidental, if the Instrument be separate, but not if it be joined; the Reason of this Distinction is evident from the Union of the Soul with the Body; for that Union is substantial as it appears by itself, though the Soul makes use of the Body as of an Instrument or Organ for his operating. It is true, that Christ's Flesh is as an Instrument, but not as a separate one; therefore, &c.

We'll ask next, *if the hypostatical Union be something created?*

Note, That from what we have said, the hypostatical Union may be considered and taken in three Manners. 1. For the unitive Action, or the Union itself. 2. For the formal Conjunction of the divine Word with the Humanity. 3. From some Relation proceeding from the Conjunction of the divine Word with the Humanity. These pre-observed,

I answer, 1. *That the hypostatical Union, taken for the Action whereby the Humanity was united with the divine Word, is something created*; because it is a certain real and transient Action of God, which is *ad extra*, and received into the Soul and Body of Christ; therefore it is something created.

I answer, 2. *That the Union, formally taken for the Conjunction of the divine Word with the Humanity, is something partly created and partly uncreated*; because that formal Conjunction is nothing else but the divine Word himself, and the Humanity, as they agree indivisibly, in the same personal Being of Christ; and one of those Extremes being uncreated, *viz.* the Person of the Word, and the other created, *viz.* the Humanity; it is therefore something partly created and partly uncreated.

I answer, 3. *That the hypostatical Union, taken for a Relation or mutual Respect, proceeding from the mutual Conjunction of both, is something partly uncreated, partly*

created. For if according to the Sentiment of some Philosophers, a Relation is something super-added to the Subject, or be the Subject itself as referred to the Term, so that the Term be extrinsic to the Relation; it follows, that the hypostatical Union, taken for such a Relation, is partly something created, and partly something uncreated; for if such a Relation be considered in Christ's human Nature, it will be something created; but if it be considered on the Part of the divine Word it will be something uncreated.

Note, That from this I'll pass to the *Communication of the Idioms*; explaining, 1. What is understood by the *Communication of Idioms*, and whether they are to be admitted in Christ by the hypostatical Union. 2. I'll make some Remarks on that Subject, and, 3. Propose some Rules; therefore,

I'll ask, 1. *What is understood by the Communication of Idioms, and whether they are to be admitted in Christ?*

To which I answer, *that the Communication of Idioms can be defined the Predication in concreto, of the divine and human Nature of the Properties of both, and of their Supposite*.

It is said, 1. *A Predication in concreto*, because a Predication *in abstracto* would be false and impossible, for the Divinity is not Humanity; and *in abstracto*, signifies that some Nature existing as separated from the Supposite.

It is said, 2. *Of the divine and human Nature respectively of one another*, because those two Natures in Christ can very well predicate of one another *in concreto*; for we can very well say God is Man, and Man is God.

It is said, 3. *And of the Properties of both Natures*; because likewise the Properties of both can be predicated *in concreto*; thus Man can be said eternal, and God mortal.

It is said, 4. *And of the Supposite of those Natures*, because both Natures can very well be predicated of Christ as well as their Properties. Thus this Predication is just, Christ is God; likewise Christ is a Man, Christ is immortal, and Christ is passible.

I'll ask, 2. *If the Communication of Idioms is to be admitted in Christ?* which I'll answer in the Affirmative. Which is an Article of Faith, and which I prove by the Scripture, attributing to God those Things which are proper either to the divine or to the human Nature: As when it is said John iii. *And no Man has ascended up to Heaven but he that came down from Heaven, even the Son of Man which is in Heaven*. And Luke i. *Therefore also that holy Thing that shall be born of thee, shall be called the Son of God*.

I prove it, 2. By the Councils, particularly that of *Ephesus*, in the Anathema's published by Cyril, and approved by the Council, whereby the Nestorians, denying the *Communication of Idioms*, were condemned. And there is declared that Christ can be said, and is surely a true God and a true Man.

I prove it, 3. By the Fathers, particularly St. Leo, *Epist. 83. ad palestin.* where he speaks thus, *It is no Matter from what Substance he be named, since inseparably the Truth of the Person remaining, he is the same; and the Son of Man for the Flesh, and the Son of God for his same Divinity with the Father*.

I prove it, 4. Because in Christ is a mutual Predication, *in concreto*, of those Natures, *viz.* of the divine and of the human, likewise of the Properties of both, and of their Suppositum, as St. John Damascenus insinuates, *lib. 3. de fide Christ. c. 3.*

From what I have said, it is easily understood in what Sense must be taken those Things which Christ sometimes says of himself, and in which appears some Contradiction; *v. gr.* as when he says, John xiii. *The Father is greater than me*: And he says, John x. *The Father and Me are one*. In these Words there is no Contradiction, if in the first Place, Christ be understood to have spoke of himself, according to the human Nature; and in the last, to have spoke according to the Divine.

Note, 1. That though some Propositions, pertaining to the Mystery of the Incarnation, can be admitted, in a logical Rigour; it is, notwithstanding, safer to abstain from them: Because when we speak of that Mystery,

flery, we are by no Means to favour the Hereticks ; who often take Occasion from our Manner of Speaking, to maintain their Errors with more Obstinacy. Therefore we must avoid, as much as possible, having any Expressions common with the Hereticks : Whence though the following Expressions are true in some Sense, and used by some of the Fathers, viz. *Christ is a Creature ; Christ has begun to be ; Christ is God's Servant ;* and the like ; because the Arians used the same Expressions to attack the Divinity of the Son ; it is better to abstain from them, or not use them, but with some Reduplication of human Nature ; saying, v. gr. *Christ as Man is a Creature ; as Man has begun to be ; as Man is God's Servant.*

Note, 2. That some Propositions of the Fathers are not so much to be taken according to the Signification of the Words, as according to the Sense thereof, which was true and orthodox ; as it appears by the Example of those, who said that the Son of God had assumed Man ; for they did take the Term Man *in concreto*, for Humanity *in abstracto*.

As to the Rules relating to the Communication of Idioms, it may be asked, *Which are those Rules of the Fathers, whereby we can be directed in the Communication of Idioms ?*

To which I answer, that those Rules are the following ones, because some of them are proposed by the Fathers, and others are commonly received by the Theologians. The first whereof is this, that *of all the Names proposed for the Person of Christ, or of the Divine Word, all those can be predicated in concreto, which signify either the divine or human Nature, or their Attributes and Properties.* Because supposed that the Names *in concreto* signify that which has a Form signified by such Names ; and supposed that Christ includes in himself the divine and human Nature, with their Properties, it is not surprising if both Natures and their Properties, by whatever Term they be expressed, can be predicated of Christ, *in concreto*. Thus it can be said of Christ, what Peter has said of him, *Acts i, This is the Lord of all.* And what the same Apostle said, *He has suffered for us, and carried our Sins in his Body upon the Cross.*

The second Rule is, that *no Property of the human Nature, even in concreto, can be predicated of the Person of the Divine Word, with a Reduplication of the Divinity ; nor any Property of the divine Nature, can be predicated of the human Nature, even in concreto, with a Reduplication of the Humanity ;* whence it cannot be said, that Christ, as God, has suffered and is dead ; nor ought we to say of Christ, that as Man he is omnipotent, eternal, &c. because it would follow hence, that the Natures, or their Properties, are confused in Christ.

The third Rule is, that *no Predicate including formally the human Person, or excluding the divine, is to be attributed to Christ ;* v. gr. it must not be said that Christ is a pure Man, or that he be different from God : Because those, or the like Propositions, would signify either that the Person of Christ is not divine, or that there are two Persons in him, which is contrary to Truth ; therefore, &c.

Note, That from this I'll pass to another very essential Point, which is concerning the Will, and Liberty of Christ ; asking first,

If, and how many Wills, there was in Christ ? To which I answer, that *there were two Wills, properly said, in Christ, viz. the divine and the human Will ;* which I prove by the Scripture, the Councils, Fathers, and by Reason.

By the Scripture, *Luke xxii. Father, if thou be willing, remove this Cup from me ; nevertheless not my Will, but thine be done.* John v. *I seek not mine own Will, but the Will of the Father which has sent me.* It appears clearly from these Words, that there were two Wills in Christ, viz. one which he said to be his, and was distinct from that of the Father ; and the other which he said to be his Father, and which was common between the Father and him ; since all those Things which are essential in the Father, are common to all the Persons. Whence it is not surprising if Christ says to his Father, *Luke xv. Father, all that I have is thine, &c.*

By the Councils, particularly the sixth General, *Act. 13. fid. profess. in these Words ; We say that there are two natural Wills in Christ, and two natural Operations, indivisibly, inconvertibly, and without Confusion.* Likewise by the Council of Lateran under Martin I. *can. 11.* where it was defined against the *Monothelites*, that there were two Wills in Christ.

By the Fathers, particularly St. Ambrose, *lib. 19. in Luk.* where he speaks thus ; *When he said, not my Will, but thine be done ; he referred his to Man, and that of his Father to Divinity.*

By Reason, because Christ was perfect God and perfect Man, and consequently had two Wills, since each intellectual Nature has its proper Will.

From what I have said it may be inferred, that those erred with Regard to this Duality of Wills. 1. Those who imagined that Christ was but a pure Man, and as such attributed to him no other but the human Will. 2. Those who pretended that Christ was only a phantastical Man, and thus divesting him of the human Nature, deprived him at the same Time of the human Will. 3. The *Monothelites*, who had for a strenuous Asserter of their Errors *Macbarius of Antioch*, who being examined on his Profession of Faith, answered thus in the sixth general Council, *Act. 8. Was I even to be cut into Pieces and thrown into the Sea, I would not say, that there are two Wills, or two natural Operations in the Dispensation of the Incarnation of our Lord Jesus Christ.*

It may be asked here, *If in Christ, besides the human Will, there was that Will which is imperfect, and is commonly called the Will of Sensuality, or the sensitive Appetite ?*

Which I answer in the Affirmative ; because Christ had the human Nature ; and consequently what belongs to it, observing however that such a Will is called by Participation : Whence it follows, that in Christ there was only one human and rational Will, existing in him, together with the divine Will.

We'll ask next, *If Christ's Will was a Free Will, properly said, even with Respect to the Works commanded by the Father ?*

Note, 1. That there are three Sorts of Wills, viz. of Nature, of Grace, and of Glory. By the first we are free not only from Coaction, but likewise from Necessity, according to this, *1 Cor. ii. Not having Necessity, but having the Power of his Will.* By the second, we are free from the Servitude of Sin, according to this, *Rom. vi. Delivered from the Slavery of Sin, you are made the Servant of Justice.* By the third, we are delivered from the Miseries of this Life, according to this, *Rom. viii. The Creature itself will be delivered from the Servitude of Corruption, and admitted to the Freedom of the Children of God.*

Note, 2. That it is Question here of the Liberty of Nature, whereby he that is free is delivered from Necessity, and is a Faculty agreeable to the intellectual Nature, which is subject neither to an outward Violence, nor to an inward Inclination ; but by it every Thing required to act, presupposed, will, can act or not act, or act the Thing opposite, at Pleasure.

Note, 3. That the Necessity opposite to Liberty, may be considered double, viz. one of Coaction, and the other of Inclination. The Necessity of Coaction, is an outward Induction of some Violence ; but such a Necessity cannot find Place in the Willing, because all Motion of the Will, is a certain Inclination of the Will towards something. But all Violence is against the Inclination of the Thing, since that is called violent, the Principle whereof is outward, without any Concurrence, but rather a Reluctancy from the Part of him to whom Violence is offered. But the Necessity of Inclination, is a certain inward Induction, determining the Will to some certain Thing ; so that it is necessary to suppose the Thing, toward which the Will is thus inclined.—This Necessity of Inclination can also be considered double, viz. one natural, and the other adventitious.—The natural, is the Appetite itself of a convenient Good, which is in the Will in the same Manner as the natural Inclination towards the Beatitude. But the adventitious is a necessary Appetite happening to the intellectual Nature from some

some outward Form, such is the Inclination of the Blessed of loving God necessarily, through a consummate Charity, because seen intuitively, for a Blessed who sees God clearly cannot hate him, or desist from loving him. These pre-observed.

I answer, 1. *That Christ's Will was free of a Freedom properly said, that's to say, as well of a Freedom from Co-action, as of a Freedom from Necessity*; because that Will is free of a Freedom properly said, which is capable of Election, since Election is a proper Act of an undeterminate Will; but such was Christ's Will, as we may learn from the Passages of the Scripture, and of the Fathers I am going to quote; therefore, &c.

From the Passages of the Scripture, *Isa. vii. Butter and Honey shall be eat, that he may know to refuse the Evil and chuse the Good.* John x. *No Man takes my Life from me, but I lay it down of myself: I have Power to lay it down, and I have Power to take it again.* Hebr. xii. *Who for the Joy that was set before him, endured the Cross, despising the Shame.* It may be easily inferred from these Words, that there was in Christ that Liberty free from Necessity, since something is said to be in our Power when we have such a Liberty towards it, as of two Things proposed, to reject one and accept the other.

From the Passages of the Fathers, particularly St. Jerome, on these Words of *Isa. liii. He has been offered, because he would; for, says he, he has not suffered the Cross by being necessitated to it, but of his own Free-Will.* From St. Leo, lib. 3. *de pass. Christ. c. 2.* where he speaks thus; *All the Outrages, Ignominies, Pains, and Vexations, which the Fury of the Impious has offered to our Lord, he has suffered them, not through Necessity but of his own Will.* Likewise from St. Gregory, lib. 24. *moral. c. 2.* in these Words, *He has willingly, and without the least Necessity, submitted himself to our Death.*

This is confirmed from that Christ was capable of Merit and Obedience; since it appears from the Scripture that he merited in fact, and became obedient to Death; therefore it follows, that he had a Will free from Necessity, since without such a Will he could not have merited, nor be properly obedient.

It may be objected, that Christ was impeccable, and Impeccability was inconsistent with that Liberty properly said, which is free from Necessity; therefore that Christ's Will was not free of that Liberty which is from Necessity.

I answer, that Christ's Impeccability could be very well reconciled with his Liberty; because, though Christ, by reason of Impeccability, was not free towards observing or not observing in general the Precepts imposed on him by the Father, v. gr. the affirmative Precept, whereby he was obliged to redeem the human Race by his Death; he was notwithstanding free to observe it, or not observe it in the Species or in the Individual, v. gr. he was free to accept the Death commanded by the Father, at such an Hour, sooner or later, with an Excess of Charity greater or smaller, by a Motive of such or such Virtue, viz. either by a Motive of Religion, or of Patience, or of Fortitude, or of Obedience, or the like. Thus it appears that the Liberty from Necessity in Christ was not absolutely incompatible with his Impeccability.

Our next Question is, *If the human Will of Christ was entirely conformed to the divine Will in the Thing willed?*

Note, 1. That Christ's human Will may be considered in two Manners. 1. As imperfect and sensitive, and thus it is nothing else but the sensitive Appetite itself, the Property whereof is to desire the sensible Good, and avoid and fly from the sensible Evil. 2. As rational, and thus is nothing but that natural Faculty of the Soul which flows from it, the Property whereof is to prosecute Good and avoid Evil.

Note, 2. That the rational Will may be considered in two Manners, 1. As Nature; 2. As Reason. It is considered as Nature, when considered as an appetitive Faculty prosecuting Good, necessarily by itself, and not freely, and flying from Evil, or any Thing else which is not agreeable; or is an appetitive Faculty prosecuting the Good, agreeable to Nature itself and to the Senses, and flying through an Instinct of

Nature from all that is not agreeable to them. As when, v. gr. by such an Instinct it desires Health, Life, and the like, or when it flies from Illness and Death; for these Goods are agreeable to Nature, and these Evils are disagreeable to it. But Will is considered as Reason, when considered as an appetitive Faculty, chusing a Means freely with Regard to the End, or when considered as an appetitive Faculty, prosecuting honest Good, according to the Judgment of the Understanding.

Note, 3. That all human Will may be considered as conformable to the divine in three Manners: 1. Only in the material Object, viz. by willing the same Thing God wills, but not by the same Motive; thus the Jews were willing that Christ should suffer, as God was willing he should; but God was willing by a Motive of Charity, and the Jews by one of Hatred. 2. In the formal Object only, and not in the material, viz. by willing some other Thing than God wills, though by the same Motive. Thus a Father is willing that his Son should live to be saved, whom God would have him die for the same Reason, lest Malice should deprave his Understanding. 3. In the material and formal Object together, viz. by willing the same Thing God wills, and by the same Motive; thus God was willing that Christ should suffer for the Redemption of the human Race, and Christ was willing to suffer for the same Reason.

Note, 4. That the Conformity of the human Will with the divine, can be explained in another Manner, by saying, that the created Will can be conformable to the divine in three Manners, 1. Effectively, viz. when he wills the same Thing, the divine Will is willing it should will. 2. Materially, viz. when it wills the same Object God wills. 3. Formally, viz. when it wills by the same Motive the divine Will is willing.

Note, 5. That Christ's human Will may be considered either as efficacious or inefficacious. These pre-observed,

I answer, 1. *That Christ's human Will considered as Reason, and as efficacious, has always been conformed subjectively, materially, and formally, to the divine Will.* Which I prove by the Scripture, the Fathers, and by Reason.

By the Scripture, which insinuates it, *Psalms xl. in these Words, In the Volume of the Book it is written of me; that I delight to do thy Will, O my God.* John iv. *My Meat is to do the Will of him that sent me.* And chap. vi. *For I came down from Heaven not to do my own Will, but the Will of him that sent me.*

By the Fathers, particularly St. Augustine, *Traet. 19. in Joan. c. 5.* towards the End; *I do not search my Will, not mine, says he, not my proper Will, not of the Son of Man, not my Will which should resist to God.*

By Reason, because if all, and every one ought to conform his Will to the divine Will, and should pray every Day, that God's Will be done on Earth as it is in Heaven, and cannot be excused from that Conformity but through Ignorance; how much more ought Christ, who is the Holy of Holies, and to whom God's Will was known, be conform to it, even under Pain of Prevarication, of which he was not capable, since he was impeccable.

I'll confirm and explain in particular, how Christ's efficacious human Will was effectively, materially, and formally, conform to the divine. It was effectively conform to the divine, because the human Will of Christ would all that God was willing she should will. It was conform materially, or in the material Object, because it would the very same Thing God would. And lastly, it was conform formally, because by the same Motive the divine Will would something, the efficacious human Will of Christ, would have it.

I answer, 2. *That the inefficacious human Will of Christ, or the Will of Sensuality, and likewise the rational Will considered as Nature, or as natural, was always effectively conform to the divine Will, but not always conform materially.*

I prove the first Part, viz. *that such a Will was always conformable effectually to the divine; because such a*

Will in Christ, would what the divine Will wanted it should will. If it be objected, that such a Will wanted to avoid Death, though the divine Will was willing that Christ should suffer and die. I'll answer, that that Nolition of the human Will, was effectually conformable to the divine, from that God who is Author of Nature, permitted such a Nolition; which St. John Damascenus insinuates, *lib. 2. orthodox. fid. c. 15.* by saying, *that human Nature was moved in Christ by its proper Motions.*

I prove the second Part, viz. *that the inefficacious, sensitive, and natural Will, or the rational consider'd as Nature, was not always conformable to the divine;* because it would something different from what the divine Will would; as it appears from that the divine Will would that Christ should suffer and die, to redeem the human Race; and the sensitive and natural Will of Christ wanted to avoid it, as disagreeable to Nature, and to the Senses; as is evident from *Matt. xxvi. Let this Cup pass from me; nevertheless not as I will, but as thou wilt.* And *Luke xxii. Nevertheless not my Will, but thine be done.* Whence St. Augustin speaks thus, *lib. 3. cont. Maxim. c. 19. In what Christ says, not what I will, but what you will, he shews, that he would something different from what his Father would.*

I prove the third Part, viz. *that the inefficacious, sensitive, and natural Will of Christ, could not be conformable to the divine Will;* because it could will a Motive different from the Motive whereby the divine Will could will something.

But, say you, if such a Thing was, there had been a Contrariety of Wills in Christ; which cannot be said: Therefore, &c.

I deny it, since a Contrariety properly said, cannot be but between two efficacious Wills.

Note, That from this I'll pass to the Consideration of those Things which the Son of God incarnated, has carried in the Nature united to him, and of what happened to him at his Coming into the World, and while he lived in it, and at his going out of it, and after he had quitted it, beginning by his Conception: Therefore,

I'll ask, 1. *If Christ can be said conceived; of what Matter his Body was formed; and whether his Flesh can be said to descend from Adam, Abraham, and David?*

I answer to the first Part of this Question, *that Christ can be truly said conceived;* because we read it in formal Terms, in the Symbol of the Apostles, viz. *that he was conceived of the Holy Ghost;* or, which is the same Thing, his Body was formed by the Operation of the Holy Ghost.

I answer to the second Part, *that Christ's Body was formed of the purest Blood of the blessed Virgin?* Because this is affirmed by St. John Damascenus, *lib. 3. c. 2.* when he says, *that the Son of God had formed to himself, of the purest Blood of the Virgin, a Flesh animated by a rational Soul.* This Sentiment being confirmed by this Passage, *Luke i. The Holy Ghost shall come upon thee, and the Power of the Highest shall overshadow thee.* By this *Gal. iv. God has sent his Son made of a Woman:* Therefore, &c. Because, as St. Thomas observes, *p. 3. q. 31. art. 4. and 5.* Christ is said to be made of a Woman, to accomplish thereby the Diversity of human Generation: For the first Man was made of Earth, without Man and Woman: Eve was produced from Man without a Woman: All others are produced of Man and Woman: But this fourth Manner of Conception was left for Christ, that he should be formed of a Woman without a Man.

It may be objected, that if Christ had been conceived of a Woman, he had been unclean, according to *Job xv. Can a Man be justified when compared to God, or appear clean, when born of a Woman?* But in Christ nothing is or can be unclean, since he is himself the Wisdom of God, of whom it is said, *Wis. vii. He incurs nothing spotted;* therefore it does not appear, that he was conceived, or that it was even decent he should be conceived of a Woman.

I answer, that Christ had been unclean perhaps, if he had been conceived in the sensual Pleasures, or by the

usual Copulation of a Man with a Woman, but not as he was conceived by the Operation of the Holy Ghost. The Reason of this is contained in what we read *Acts x. What God has created, must not be called common, i. e. unclean;* but the Conception of Christ is the Work of God, therefore it is not unclean. Whence St. Augustin, *lib. cont. quinq. hæres. c. 5.* introduces him speaking thus; *What can offend thee, in my Nativity? I am not conceived by a sensual Cupidity? I had made the Mother from whom I am born. If the Sun by his Rays can dry the Filth of Cleopatra's, and is not defiled by it, how much more the Radiancy of the Eternal Light, can purify wherever it appears, and not be defiled.*

I answer to the third Part, *that Christ's Flesh is derived from Adam;* because the Son of God, as the Apostle teaches it, *Heb. ii. Has taken the Seed of Abraham,* which Seed descended from Adam: Therefore, &c.

Notwithstanding, 1. This, *1 Cor. xv. The first Man from the Earth, terrestrial, and the second from Heaven, celestial.* Because this Place does not import, that Christ is to be said from Heaven, as to the Matter of his Body; but either as to his formative Virtue, or as to his Divinity.

Notwithstanding, 2. That those who descend from Adam have sinned in him, *Rom. v.* or should have sinned in him; because this is only true of those, who descend from Adam thro' the seminal Way, whereby Christ is not descended from Adam.

I answer to the fourth Part, *that Christ's Flesh descended from Abraham and David;* because the Scripture insinuates it, when it says, that it was promised to both, that the Messiah should descend from them. Whence it is not surprizing, if Christ, *Matt. i.* is called *The Son of David, the Son of Abraham.*

We'll ask next, *Which was the active Principle of Christ's Conception, if it was the Holy Ghost, and him alone, and whether the same Holy Ghost can be called the Father of the Son?*

To the first Part of this Question, I answer, *that the whole Trinity was the active Principle of the Formation of Christ's Body; which, notwithstanding, by some Appropriation, is attributed to the Holy Ghost.*

I prove the first Part of this Answer, viz. *that the Formation of the Body of Christ is attributed to the whole Trinity;* because that Formation is a Work *ad extra*, which is common to the whole Trinity, as St. Augustin teaches it, *lib. 1. de Trinit. c. 4. and 5.*

I prove the second Part, viz. *that the Formation of the Body of Christ, is notwithstanding attributed by some Appropriation to the Holy Ghost;* because, according to St. Thomas, that Work which is of Love and Mercy is attributed to the Holy Ghost, as the Works of Power are attributed to the Father, and those of Wisdom to the Son; though they be Works common to the whole Trinity; but Christ's Conception, or, which is the same, the Formation of his Body, is an Act of Love, as is evident from *John iii.* where it is said that *God so loved the World that he gave his only begotten Son:* Therefore it is not surprizing if it be attributed to the Holy Ghost.

I answer to the second Part of the Question, *that though Christ, in that Sense above-mentioned, be conceived of the Holy Ghost; he, notwithstanding, cannot be said the Son of the Holy Ghost; nor the Holy Ghost be called the Father of Christ:* Because, in this Place, he is properly said a Son, who proceeds perfectly semblable in Nature to his productive Principle; but Christ does not proceed perfectly semblable in Nature to the Holy Ghost, as it appears by itself: Therefore, &c. Notwithstanding that he is rightly called the Son of Mary; because he proceeds from her as administering the Matter, in the Similitude of the Species; but Christ does not proceed from the Holy Ghost, as administering something to his Substance in the Similitude of the Nature; therefore he cannot be said his Son.

It may be asked here, *If the blessed Virgin, contributed in something actively to the Conception of Christ's Body?* To which I answer in the Negative; because she only administered the Matter, and operated nothing but before the Conception, viz. in preparing the Matter for it.

Our next Question is, *At what Time, and in what Manner and Order, Christ's Conception was made? whether*

ther in the first Instant of the Conception, the Body of Christ was formed and animated, and was taken by the Word?

I answer, 1. That Christ's Body was formed in an Instant; according to St. Gregory, *lib. 18. moral. c. 36.* in these Words, *The Angel announcing, the Holy Ghost coming, the Word was presently in the Womb, and the Word was presently made Flesh in the Womb.* Either because the active Principle of that Conception, viz. the Holy Ghost, or the whole Trinity, has an infinite Power whereby the Matter could be immediately disposed to a due Form; or because the Word in the first Instant of the Conception, took the Body, already formed; therefore it follows, that such a Body was formed in the first Instant of the Conception.

It is objected, that the Conception could not be made without a local Motion, whereby the purest Blood of the blessed Virgin, was to flow to the Place proper for the Generation; therefore it was not made in an Instant, since a local Motion imports a Succession.

I answer, that such a local Motion was the Preamble of the Conception, but not the Conception itself; which to understand better, we must observe, 1. That in the Conception, or Formation of Christ's Body, three Things may be consider'd, 1. The local Motion of the Blood to the Place of the Generation. 2. The Formation of the Body from such a Matter. 3. The Increase, whereby it is carried to some perfect Quantity; according to this, *Luke ii. He increased in Age and Wisdom;* and consequently, we must observe, 2. That the first and third, could not be done in an Instant, since they have a Succession; but that it is false, that the second could not be done in an Instant.

I answer, 2. *That the Body of Christ was animated in the first Instant of the Conception;* either because St. John Damascenus, *lib. 3. c. 2.* insinuates it, when he says, *That the Flesh was made at once, the Flesh of the Word of God at once, and the Flesh animated with a rational and intellectual Soul, at once.* Or for the Reasons heretofore alledged; for there is no Comparison between the Body of Christ and other Bodies.

I answer, 3. *That the Body of Christ, in the first Instant of the Conception, was assumed by the Word.* Which I prove by the Fathers, and by Reason.

By the Fathers, particularly St. Augustin, *lib. de fid. ad petrum. c. 18.* Believe for certain, that the Flesh of Christ was not formed in the blessed Virgin, before he was taken by the Word.

By Reason, because, if the Flesh of Christ had been conceived before it was taken by the Word, it had had some Hypostasis, besides the Hypostasis of the Word of God, which is against the Truth of the Incarnation: Therefore, &c.

It is objected, 1. That the Body must have been formed before it was taken, for what is not, cannot be taken; therefore it was not taken in the same Instant it was formed.

I deny the Antecedent of this Antinomia, for the Reasons above-mentioned.

It is objected, 2. That in all Things generated, the imperfect precedes in Time the perfect; but the Body of Christ is something generated, therefore it did not arrive in the first Instant to the last Perfection, which was its Union with the Word of God; but it was first conceived, and then taken.

I answer, that in all Things generated distinct from the Body of Christ, the imperfect is before the perfect, with Respect to Time; but not absolutely. Because in the Mystery of the Incarnation, there is no Ascent of something pre-existing Proficient, towards the Dignity of the hypostatical Union, as Photinus pretended; but a Descent, inasmuch as the perfect Word of God has taken to himself the Imperfection of our Nature; according to this, *John vi. I am descended from Heaven.*

We'll ask next, *If Christ's Conception, ought to be said natural, or miraculous?*

Note, 1. From St. Ambrose, *lib. de Incarnat. c. 6.* that several Things are found in the Mystery of the Incarnation, according to Nature, and beyond Nature; and to understand better, which was in him according to Nature, and above Nature,

Note, 2. That Christ's Conception can be considered in two Manners, 1. From the Part of the Matter. 2. From the Part of the Form, and from that of the Agent, i. e. God operating. These pre-observ'd,

I answer, *that Christ's Conception from the Part of the Matter, was natural; but from the Part of God operating, was absolutely supernatural and miraculous.*

I prove the first Part, viz. *that it was natural from the Part of the Matter;* because the Matter administered by the blessed Virgin was her own Blood.

I prove the second Part of my Answer, viz. *that Christ's Conception from the Part of God's acting was absolutely miraculous, and supernatural;* because we judge of every Thing more according to the Form, than according to the Matter; and more according to the Agent, than according to the Patient; therefore God who is the Agent in this Mystery, acting supernaturally, gives Occasion to the Conception of Christ, being called supernatural absolutely, and natural *secundum quid.*

It is objected, 1. That Christ, by his Conception, is called the Son of Man, but he cannot be truly called thus, unless his Conception be natural; therefore Christ's Conception is simply natural.

To which I answer, that he cannot be called the Son of Man, unless his Conception be natural, from the Part of the Matter administered by the blessed Virgin; but not from the Part of the Agent.

With Regard to Christ's Conception, it may be asked, 1. *If that Body, taken by the Word, was passible and mortal, and why he took such a Body?*

I answer, that it seems that Christ's Body should not have been passible and mortal, 1. Because Christ had not sinned in our first Parent, and was not subject to any Sin. 2. Because he enjoy'd the beatifick Vision; though he would that his Body should be passible and mortal, to recommend thereby his extream Charity, and give an illustrious Example of it.

It may be asked, 2. Why from the Beginning, and the Instant of his Incarnation, the Word took the Body of an Infant, and not that of a Man perfect; and why he would be shut up in the Womb of his Mother, during nine Months?

I answer, that it was for the Reason alledged by St. Paul, *Heb. ii.* to become semblable in all Things to his Brethren, and to give them an Example of Mortification and Patience.

Note, That from Christ's Conception, I'll pass to his Nativity, and examine all the Circumstances which have attended it.

I'll ask first, *How many Nativities are to be attributed to Christ?* To which I'll answer, *that two Nativities are to be attributed to him, one eternal, whereby he proceeds eternally from his Father; and the other temporal, whereby he is born, in a certain Period of Time, of his Mother.* Which I prove by the Scripture, the Councils, Fathers, and by Reason.

By the Scripture, which mentions both Nativities; for it is spoke of the Eternal, *Psal. cx.* in these Words, *Before the Morning I have begotten thee from the Womb.* And of the Temporal, *Matt. i. The Generation of Christ, was thus, &c.* And *Matt. ii. Jesus being born in Bethlehem, &c.*

By the Councils, particularly that of Chalcedon, in the first Action, where it is said, that though the Son of God wanted no second Nativity, he notwithstanding was born in the Flesh, for us and for our Salvation, uniting to himself the Humanity, according to its Substance.

By the Fathers, particularly St. John Damascenus, *lib. 1. c. 7.* where he expresses himself thus, *We confess two Nativities of Christ, one eternal, which is from the Father; and one from the Mother, in the latter Times, for us.*

By Reason, because there are two Natures in Christ, one whereof he has received from his eternal Father, and the other from his Mother in a Period of Time.

It is objected, that in Christ there is only one Person, and therefore one Nativity; because the Nativity belongs to the Person, not to the Nature.

I answer, that the Nativity is of the Person as of a Subject, and of the Nature as of a Term: For as the Motion is diversified according to the Diversity of Terms, and in the double Nativity of Christ, a double Motion is considered, if not a Motion properly said, at least a Motion according to our Manner of conceiving, in the eternal Nativity of Christ; hence it is that a double Nativity is established in Christ.

It may be asked here, *If, as we admit a double Nativity in Christ, we admit likewise a double Filiation?* Which I answer in the Affirmative, from the Part of the Cause; and in the Negative from the Part of the Subject. The first Part of my Answer is evident, because there is a double Cause, *viz.* a double Nativity and consequently a double Filiation; and likewise the second Part, because there is but one Subject, *viz.* the Person, which is the Subject of the two Nativities.

We'll ask next, *If Christ in his temporal Nativity, had the blessed Virgin for his Mother, and whether she must be called Mother of God?*

To the first Part of the Question I answer, *That Christ in his temporal Nativity, had the blessed Virgin for his Mother.* I prove it by the Scripture, the Fathers, and by Reason.

By the Scripture, *Matt. i. When his Mother Mary was espoused to Joseph, &c.*

By the Fathers, particularly St. Gregory Nazianzen, *Orat. de Christ. nativ.* in these Words, *If any Body does not believe that Mary is the Mother of God, he is besides the Divinity.*

By Reason, because Christ did not bring along with him a Body from Heaven, but took it from the Virgin his Mother.

It is objected, that the blessed Virgin did not concur actively to the Generation of Christ, but only by administering the Matter; for which she cannot be called the Mother of Christ, otherwise the Wood should be called the Mother of a Bed, or of a Door; therefore, &c.

I answer, that there is a great Disparity between the blessed Virgin, and Things inanimate, because Paternity, Maternity, and Filiation, do not belong to any other Generation but to that of Things living.

It is objected, 2. That Christ was born by a Miracle, of the Virgin Mary, but a miraculous Generation does not suffice to establish a Maternity or Filiation, for we do not say that *Eve* was the Daughter of *Adam*; therefore, &c.

I answer, that it was miraculous from the Part of the Operation of the Holy Ghost, but not from the Part of the blessed Virgin, because Christ is born a Man of a Woman, and in the due Time of a Conception, as St. *John Damascenus* teaches it, *lib. 3. c. 7.* in these Words, *The temporal Nativity, whereby Christ is born for our Salvation is in some measure like ours, because he is born a Man of a Woman, and in the due Time of a Conception; but above ours, because not of Seed, but of the Holy Ghost, and of the Virgin Mary, above the Law of Conception.* Therefore that Nativity was natural from the Part of the Mother, but miraculous from the Part of the Operation of the Holy Ghost; whence the blessed Virgin is the true and natural Mother of Christ.

I answer to the second Part, *That the blessed Virgin can be truly called the Mother of God:* Which I prove by the Scripture, the Councils, and the Fathers.

By the Scripture, *Luke i. That holy Thing which shall be born of thee shall be called the Son of God.* Whence her Cousin *Elizabeth* saluted her as Mother of God, in the same Place lately quoted, *Whence is this to me, said she, that the Mother of my Lord should come to me?* Which is also witnessed by the Apostle, *Gal. iv.* when he says, *That God sent his Son made of a Woman, made under the Law.* For by these Words it appears, that he who is the Son of the blessed Virgin, as conceived and born of her, is likewise the Son of God, and is consequently God. This had been already foretold by *Isa. vii.* in these Terms, *Behold a Virgin shall conceive and bear a Son, and shall call his Name Emmanuel.*

By the Councils, particularly that of *Chalcedon*, which

expresses itself in these Terms, *Christ is God, let the holy Mary be written Mother of God;* he who does not think so is a Heretick; turn the Nestorians out of Doors. Likewise in the sixth and seventh general Council, and in that of *Lateran* under *Martin I.*

By the Fathers, particularly St. Gregory Nazianzen, *Orat. de Christ. nativ.* St. Peter Chrysologus, *Serm. 146.*

By Reason, because she who has truly generated God, is to be called Mother of God; but the blessed Virgin Mary has truly generated God, since she has generated Christ, who is a true God and a true Man; therefore she is to be called *Mother of God.*

Note, That I'll examine in this Place some Circumstances which accompanied Christ's Nativity, *viz.* the Place, Time, Manner, &c.

I ask first, *If Christ was born in Bethlehem, as in a convenient Place?* Which I answer in the Affirmative.

I prove that he was born in *Bethlehem* or about *Bethlehem*, because the Scripture witnesses it expressly, *Mat. ii.* in these Words, *Jesus being born in Bethlehem of Judea, in the Days of Herod the King;* which had been foretold by the Prophet *Micah*, chap. v. in these Words, *And thou Bethlehem Ephrata, thou art little in the Thousands of Judah, from thee will come forth to me, he who is to be the Ruler in Israel.* But that he was not born in that City, but only in its Neighbourhood, is understood from what we read, *Luke ii. Because there was no Room for them in the Place.*

I prove that he was born there as in a convenient Place, 1. Because he was made of the Seed of *David* according to the Flesh, as we read, *Rom. i.* whence he should be born in *Bethlehem*, that from the Place of his Nativity should be proved the Promise made to *David*, *Psal. cxxxii. Of the Fruit of thy Body will I set upon thy Throne.* 2. As St. Gregory observes, *Homil. 8. in Evangel.* *Bethlehem* is interpreted the House of Bread; but Christ says himself, *John vi. I am the living Bread who have descended from Heaven.*

I ask secondly, *If Christ was born in a convenient Time?* Which I answer in the Affirmative, because God himself had appointed that Time.

I ask thirdly, *If Christ was born without his Mother suffering the least Pain in the Delivery?* Which I answer likewise in the Affirmative, because St. *Augustin* is of that Sentiment, *Serm. 14. de nativ.* where he speaks thus to the blessed Virgin, Mother of God; *Thou hast not been found in the Conception without blushing, nor found in the Delivery with Pain.*

From this I'll pass to the Circumcision of Christ, and ask, *If Christ was really circumcised, and ought to have been circumcised?*

I answer the first Part of the Question in the Affirmative, and prove it by the Scripture, *Luke ii. And when eight Days were accomplished for the Circumcision of the Child, &c.*

I answer, 2. That it was very convenient that Christ should be circumcised, for the following Reasons. 1. To shew thereby the Truth of his human Flesh against the *Manichæans*, who denied the Reality of his Body, and against the *Apollinarists*, who pretended that Christ's Body was consubstantial to the Divinity, and also against the *Valentinians*, who affirmed that he had brought his Body from Heaven. 2. To approve the Institution of the Circumcision, to recommend by his Example the Virtue of Obedience, for which, to conform to the Precept, he was circumcised the eighth Day. 3. To prove that he was of the Race of *Abraham*, to whom the Circumcision had been commanded, in Sign of the Faith of the Coming of the *Messiah*. 4. Lest if he had not been circumcised, the *Jews* had refused to receive him. 5. To not reject the Remedy whereby the Flesh of Sin was purified; since himself was come in the Similitude of the Flesh of Sin. 6. That by loading himself with the Burthen of the Law, he should deliver others from that Burthen.

The next Question which offers to me, is, *If Christ's Nativity ought to have been manifested, and whether it was convenient it should be manifested to those to whom it was manifested?*

To which I answer, 1. That Christ's Nativity was

and ought to have been manifested, but not to all without Distinction, at least at the Beginning, but only to some designed by God.

I prove the first Part of my Answer, viz. *That Christ's Nativity was manifested*, because God revealed it by the Angels to the Shepherds, and by the Star to the Magi.

I prove the second Part, viz. *that it ought to have been manifested*; because it was necessary that it should prove profitable, otherwise Christ had been born in vain; but it could not have proved profitable unless it had been manifested, at least to some; therefore, &c.

I prove the third Part, viz. *That it ought not to have been manifested, at least at first, to all without Distinction*, either because if it had been manifested to all from the Beginning, Man's Redemption had not been accomplished by the Sacrifice of the Cross; for we read, 1 Cor. ii. *That if they had known they had never crucified the Lord of Glory*; or because if Christ's Nativity had been manifested to all from the Beginning, the Merit of Faith whereby Men are justified, had been vastly diminished; because that Faith is the Argument of Things which do not appear, Hebr. xi.

I prove the fourth Part, viz. *That the Nativity of Christ ought to have been manifested to some*; because the Order of the divine Wisdom requires, that God's Gifts and his Secrets should not be known to all equally and together; but immediately to some, and by them derive to others.

I answer, 2. *That Christ's Nativity was conveniently manifested to those to whom it was manifested at the Beginning, viz. to the Shepherds and to the Magi*; because all that is done by God's Order is conveniently done; and because by the Manifestation made to the aforesaid Persons, Christ was manifested to Persons of every Condition, because he was come to save Men of all Ranks and Conditions, according to the Apostle, Coloss. iii. *Where there is neither Greek nor Jew (viz. in Christ) Circumcision nor Uncircumcision, Barbarian, Scythian, bond nor free, but Christ is all and in all.*

If it be asked, *what was that Star which appeared to the Magi*? I'll answer, that it was not one of those Stars created from the Beginning, but that it was newly created for that Purpose: Which I prove by the Fathers, and by several Reasons.

By the Fathers, particularly St. Augustin, lib. 2. cont. Faust. c. 5. where he speaks thus; *It was not one of those Stars created at the Beginning, which observe their Course according to the Order prescribed by the Creator; but at the Novelty of a Virgin being delivered of a Child, a new Star appeared.* And by St. Leo, Serm. 1. de Epiphania. *The Light of a new Star, says he, appeared to three Magi of the East, which being brighter than all the other Stars, attracted the Eyes and the Minds of all the Beholders, to give to understand that such an unusual Thing did not appear without Cause.*

I prove it by the following Reasons; 1. Because it moved in a new Manner, for it was carried from North to South. 2. It appeared after a new and unusual Manner, since it appeared not only in the Night but likewise in Day-time, which is not common to other Stars. 3. It did not appear always, but was sometimes hidden; since when the Magi came to Jerusalem it hid itself, and shewed itself again after they had left Herod. 4. Because it had not a continual Motion, but conformed itself to that of the Magi, as to their Time of March, or of Rest.

Note, That from this I'll pass to the Purification of the blessed Virgin, and to the Presentation of Christ in the Temple.

I'll ask, 1. *If the Virgin Mother of God, accomplished the Law of the Purification?* To which I answer in the Affirmative, and prove it by the Scripture, Luke ii. *And when the Days of her Purification according to the Laws of Moses were accomplished, &c.*

Note, That though the blessed Virgin was not obliged to accomplish the Law of the Purification, she would notwithstanding come to the Temple to accomplish it, and that conveniently. She was not obliged, &c. because she had not conceived from the Seed of Man. It was notwithstanding convenient for her to accomplish the Law of the Purification, because as the Plenitude of the Grace of the Son was descended to the

Mother, it was proper that the Mother should conform herself to the Humility of the Son, who would submit himself to the Ceremonies of the Law, though he was not subject to it.

I'll ask next, *If Christ was presented to the Temple; if that Presentation was convenient, and which were the principal Circumstances of it?*

I answer to the first Part of the Question, *That Christ was presented to the Temple, and that it was convenient he should*; which I prove by the Scripture, particularly that he was presented in the Temple, Luke ii. *They brought him to Jerusalem to present him to the Lord, as it is written in the Law of the Lord, every Male that openeth the Womb shall be called holy to the Lord. And to offer a Sacrifice according to that, which is said in the Law of the Lord, &c.*

I prove, *that it was convenient that Christ should be presented in the Temple*; because suppose that Christ of his own Accord, and without any Obligation, would submit himself to the Law of the Circumcision, it was convenient he should submit himself to that of the Presentation.

Note, That of several Circumstances which could be observed in Christ's Presentation, I'll only take Notice here but of two, the first whereof is taken from the Person of Simeon, and the other from that of Anne.

As to the first Circumstance taken from the Person of Simeon, it is said of him, that Christ born was manifested to him, according to the Promise of the Holy Ghost, that he should not die before he had seen the Messiah, expected for the Consolation of Israel; and in fact, among several Children who had been brought to the Temple, Simeon enlightened by a celestial Light, discovered Jesus, took him in his Arms, blessed him; and foretold that he would be the Ruin and Resurrection of several, and a Sign of Contradiction.

If I be asked, *who was that Simeon, and if a Priest or a Laick?* I'll answer, that in all Probability he was a Laick; for if he had been a Priest, the Scripture had mentioned it.

As to the second Circumstance, taken from the Person of Anne, it is said of her, that at the very Hour Christ was brought into the Temple to stand before the Lord, she also came into it, and knowing him by a divine Inspiration, she spoke several marvellous Things of him.

Note, That our next Reflections will be on the Baptism of Christ.

Our first Question on this Subject is, *If Christ was baptized of the Baptism of John, and whether it was convenient, in what Place, and at what Time he was baptized?*

To the first Part of the Question I answer, *That Christ was baptized of the Baptism of John, and that it was convenient he should.*

I prove the first Part of this Answer, viz. that he was baptized, because that's expressly mentioned in the Scripture, Matt. iii. *Then came Jesus from Galilee to Jordan unto John, to be baptized of him.*

I prove the second Part, viz. *that it was convenient that Christ should be baptized*, for three Reasons. The first is taken from that he would not be purified himself, but would purify the Waters; that by the Contact of Christ's Flesh, which was not infected with Sin, they should have the Virtue of Baptism, and should serve afterwards for those who were to be baptized, as St. Ambrose observes, lib. 2. c. ult. in Luk. The second Reason is touched by St. Chrysostom, who says on the fourth Chapter of St. Matthew, in his perfect Work, *That though himself was not a Sinner, he notwithstanding took the Similitude of the Flesh of Sin? for though himself wanted no Baptism, nevertheless the carnal Nature wanted it in others.* The third Reason was, to give an Example of Virtue to others.

I answer to the second Part of the Question, *That Christ was baptized in the thirtieth Year of his Age; and that it was a convenient Time for it.*

I prove the first Part of this Answer, viz. *That he was baptized in the thirtieth Year of his Age*, by the Scripture, Luke iii. *And Jesus himself began to be about thirty Years of Age.*

T t t

I prove

It is objected, that in Christ there is only one Person, and therefore one Nativity; because the Nativity belongs to the Person, not to the Nature.

I answer, that the Nativity is of the Person as of a Subject, and of the Nature as of a Term: For as the Motion is diversified according to the Diversity of Terms, and in the double Nativity of Christ, a double Motion is considered, if not a Motion properly said, at least a Motion according to our Manner of conceiving, in the eternal Nativity of Christ; hence it is that a double Nativity is established in Christ.

It may be asked here, *If, as we admit a double Nativity in Christ, we admit likewise a double Filiation?* Which I answer in the Affirmative, from the Part of the Cause; and in the Negative from the Part of the Subject. The first Part of my Answer is evident, because there is a double Cause, viz. a double Nativity and consequently a double Filiation; and likewise the second Part, because there is but one Subject, viz. the Person, which is the Subject of the two Nativities.

We'll ask next, *If Christ in his temporal Nativity, had the blessed Virgin for his Mother, and whether she must be called Mother of God?*

To the first Part of the Question I answer, *That Christ in his temporal Nativity, had the blessed Virgin for his Mother.* I prove it by the Scripture, the Fathers, and by Reason.

By the Scripture, *Matt. i. When his Mother Mary was espoused to Joseph, &c.*

By the Fathers, particularly St. Gregory Nazianzen, *Orat. de Christ. nativitat.* in these Words, *If any Body does not believe that Mary is the Mother of God, he is besides the Divinity.*

By Reason, because Christ did not bring along with him a Body from Heaven, but took it from the Virgin his Mother.

It is objected, that the blessed Virgin did not concur actively to the Generation of Christ, but only by administering the Matter; for which she cannot be called the Mother of Christ, otherwise the Wood should be called the Mother of a Bed, or of a Door; therefore, &c.

I answer, that there is a great Disparity between the blessed Virgin, and Things inanimated, because Paternity, Maternity, and Filiation, do not belong to any other Generation but to that of Things living.

It is objected, 2. That Christ was born by a Miracle, of the Virgin Mary, but a miraculous Generation does not suffice to establish a Maternity or Filiation, for we do not say that Eve was the Daughter of Adam; therefore, &c.

I answer, that it was miraculous from the Part of the Operation of the Holy Ghost, but not from the Part of the blessed Virgin, because Christ is born a Man of a Woman, and in the due Time of a Conception, as St. John Damascenus teaches it, *lib. 3. c. 7.* in these Words, *The temporal Nativity, whereby Christ is born for our Salvation is in some measure like ours, because he is born a Man of a Woman, and in the due Time of a Conception; but above ours, because not of Seed, but of the Holy Ghost, and of the Virgin Mary, above the Law of Conception.* Therefore that Nativity was natural from the Part of the Mother, but miraculous from the Part of the Operation of the Holy Ghost; whence the blessed Virgin is the true and natural Mother of Christ.

I answer to the second Part, *That the blessed Virgin can be truly called the Mother of God:* Which I prove by the Scripture, the Councils, and the Fathers.

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By Reason, because she who has truly generated God, is to be called Mother of God; but the blessed Virgin Mary has truly generated God, since she has generated Christ, who is a true God and a true Man; therefore she is to be called Mother of God.

Note, That I'll examine in this Place some Circumstances which accompanied Christ's Nativity, viz. the Place, Time, Manner, &c.

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I prove that he was born there as in a convenient Place, 1. Because he was made of the Seed of David according to the Flesh, as we read, *Rom. i.* whence he should be born in Bethlehem, that from the Place of his Nativity should be proved the Promise made to David, *Psal. cxxxii. Of the Fruit of thy Body will I set upon thy Throne.* 2. As St. Gregory observes, *Homil. 8. in Evangel.* Bethlehem is interpreted the House of Bread; but Christ says himself, *John vi. I am the living Bread who have descended from Heaven.*

I ask secondly, *If Christ was born in a convenient Time?* Which I answer in the Affirmative, because God himself had appointed that Time.

I ask thirdly, *If Christ was born without his Mother suffering the least Pain in the Delivery?* Which I answer likewise in the Affirmative, because St. Augustin is of that Sentiment, *Serm. 14. de nativitat.* where he speaks thus to the blessed Virgin, Mother of God; *Thou hast not been found in the Conception without blushing, nor found in the Delivery with Pain.*

From this I'll pass to the Circumcision of Christ, and ask, *If Christ was really circumcised, and ought to have been circumcised?*

I answer the first Part of the Question in the Affirmative, and prove it by the Scripture, *Luke ii.* *And when eight Days were accomplished for the Circumcision of the Child, &c.*

I answer, 2. *That it was very convenient that Christ should be circumcised,* for the following Reasons. 1. To shew thereby the Truth of his human Flesh against the Manicheans, who denied the Reality of his Body, and against the Apollinarists, who pretended that Christ's Body was consubstantial to the Divinity, and also against the Valentinians, who affirmed that he had brought his Body from Heaven. 2. To approve the Institution of the Circumcision, to recommend by his Example the Virtue of Obedience, for which, to conform to the Precept, he was circumcised the eighth Day. 3. To prove that he was of the Race of Abraham, to whom the Circumcision had been commanded, in Sign of the Faith of the Coming of the Messiah. 4. Lest if he had not been circumcised, the Jews had refused to receive him. 5. To not reject the Remedy whereby the Flesh of Sin was purified; since himself was come in the Similitude of the Flesh of Sin. 6. That by loading himself with the Burthen of the Law, he should deliver others from that Burthen.

The next Question which offers to me, is, *If Christ's Nativity ought to have been manifested, and whether it was convenient it should be manifested to those to whom it was manifested?*

To which I answer, 1. That Christ's Nativity was

and ought to have been manifested, but not to all without Distinction, at least at the Beginning, but only to some designed by God.

I prove the first Part of my Answer, viz. *That Christ's Nativity was manifested*, because God revealed it by the Angels to the Shepherds, and by the Star to the Magi.

I prove the second Part, viz. *that it ought to have been manifested*; because it was necessary that it should prove profitable, otherwise Christ had been born in vain; but it could not have proved profitable unless it had been manifested, at least to some; therefore, &c.

I prove the third Part, viz. *That it ought not to have been manifested, at least at first, to all without Distinction*, either because if it had been manifested to all from the Beginning, Man's Redemption had not been accomplished by the Sacrifice of the Cross; for we read, 1 Cor. ii. *That if they had known they had never crucified the Lord of Glory*; or because if Christ's Nativity had been manifested to all from the Beginning, the Merit of Faith whereby Men are justified, had been vastly diminished; because that Faith is the Argument of Things which do not appear, Hebr. xi.

I prove the fourth Part, viz. *That the Nativity of Christ ought to have been manifested to some*; because the Order of the divine Wisdom requires, that God's Gifts and his Secrets should not be known to all equally and together; but immediately to some, and by them derive to others.

I answer, 2. *That Christ's Nativity was conveniently manifested to those to whom it was manifested at the Beginning, viz. to the Shepherds and to the Magi*; because all that is done by God's Order is conveniently done; and because by the Manifestation made to the aforesaid Persons, Christ was manifested to Persons of every Condition, because he was come to save Men of all Ranks and Conditions, according to the Apostle, Coloss. iii. *Where there is neither Greek nor Jew (viz. in Christ) Circumcision nor Uncircumcision, Barbarian, Scythian, bond nor free, but Christ is all and in all.*

If it be asked, *what was that Star which appeared to the Magi?* I'll answer, that it was not one of those Stars created from the Beginning, but that it was newly created for that Purpose: Which I prove by the Fathers, and by several Reasons.

By the Fathers, particularly St. Augustin, lib. 2. cont. Faust. c. 5. where he speaks thus; *It was not one of those Stars created at the Beginning, which observe their Course according to the Order prescribed by the Creator; but at the Novelty of a Virgin being delivered of a Child, a new Star appeared.* And by St. Leo, Serm. 1. de Epiphany. *The Light of a new Star, says he, appeared to three Magi of the East, which being brighter than all the other Stars, attracted the Eyes and the Minds of all the Beholders, to give to understand that such an unusual Thing did not appear without Cause.*

I prove it by the following Reasons; 1. Because it moved in a new Manner, for it was carried from North to South. 2. It appeared after a new and unusual Manner, since it appeared not only in the Night but likewise in Day-time, which is not common to other Stars. 3. It did not appear always, but was sometimes hidden; since when the Magi came to Jerusalem it hid itself, and shewed itself again after they had left Herod. 4. Because it had not a continual Motion, but conformed itself to that of the Magi, as to their Time of March, or of Rest.

Note, That from this I'll pass to the Purification of the blessed Virgin, and to the Presentation of Christ in the Temple.

I'll ask, 1. *If the Virgin Mother of God, accomplished the Law of the Purification?* To which I answer in the Affirmative, and prove it by the Scripture, Luke ii. *And when the Days of her Purification according to the Laws of Moses were accomplished, &c.*

Note, That though the blessed Virgin was not obliged to accomplish the Law of the Purification, she would notwithstanding come to the Temple to accomplish it, and that conveniently. She was not obliged, &c. because she had not conceived from the Seed of Man. It was notwithstanding convenient for her to accomplish the Law of the Purification, because as the Plenitude of the Grace of the Son was descended to the

Mother, it was proper that the Mother should conform herself to the Humility of the Son, who would submit himself to the Ceremonies of the Law, though he was not subject to it.

I'll ask next, *If Christ was presented to the Temple; if that Presentation was convenient, and which were the principal Circumstances of it?*

I answer to the first Part of the Question, *That Christ was presented to the Temple, and that it was convenient he should*; which I prove by the Scripture, particularly that he was presented in the Temple, Luke ii. *They brought him to Jerusalem to present him to the Lord, as it is written in the Law of the Lord, every Male that openeth the Womb shall be called holy to the Lord. And to offer a Sacrifice according to that, which is said in the Law of the Lord, &c.*

I prove, *that it was convenient that Christ should be presented in the Temple*; because suppose that Christ of his own Accord, and without any Obligation, would submit himself to the Law of the Circumcision, it was convenient he should submit himself to that of the Presentation.

Note, That of several Circumstances which could be observed in Christ's Presentation, I'll only take Notice here but of two, the first whereof is taken from the Person of Simeon, and the other from that of Anne.

As to the first Circumstance taken from the Person of Simeon, it is said of him, that Christ born was manifested to him, according to the Promise of the Holy Ghost, that he should not die before he had seen the Messiah, expected for the Consolation of Israel; and in fact, among several Children who had been brought to the Temple, Simeon enlightened by a celestial Light, discovered Jesus, took him in his Arms, blessed him; and foretold that he would be the Ruin and Resurrection of several, and a Sign of Contradiction.

If I be asked, *who was that Simeon, and if a Priest or a Laick?* I'll answer, that in all Probability he was a Laick; for if he had been a Priest, the Scripture had mentioned it.

As to the second Circumstance, taken from the Person of Anne, it is said of her, that at the very Hour Christ was brought into the Temple to stand before the Lord, she also came into it, and knowing him by a divine Inspiration, she spoke several marvellous Things of him.

Note, That our next Reflections will be on the Baptism of Christ.

Our first Question on this Subject is, *If Christ was baptized of the Baptism of John, and whether it was convenient, in what Place, and at what Time he was baptized?*

To the first Part of the Question I answer, *That Christ was baptized of the Baptism of John, and that it was convenient he should.*

I prove the first Part of this Answer, viz. *that he was baptized*, because that's expressly mentioned in the Scripture, Matt. iii. *Then came Jesus from Galilee to Jordan unto John, to be baptized of him.*

I prove the second Part, viz. *that it was convenient that Christ should be baptized*, for three Reasons. The first is taken from that he would not be purified himself, but would purify the Waters; that by the Contact of Christ's Flesh, which was not infected with Sin, they should have the Virtue of Baptism, and should serve afterwards for those who were to be baptized, as St. Ambrose observes, lib. 2. c. ult. in Luk. The second Reason is touched by St. Chrysostom, who says on the fourth Chapter of St. Matthew, in his perfect Work, *That though himself was not a Sinner, he notwithstanding took the Similitude of the Flesh of Sin? for though himself wanted no Baptism, nevertheless the carnal Nature wanted it in others.* The third Reason was, to give an Example of Virtue to others.

I answer to the second Part of the Question, *That Christ was baptized in the thirtieth Year of his Age; and that it was a convenient Time for it.*

I prove the first Part of this Answer, viz. *That he was baptized in the thirtieth Year of his Age*, by the Scripture, Luke iii. *And Jesus himself began to be about thirty Years of Age.*

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I prove the second Part, viz. *that it was a convenient Time for it*; because Christ was baptized as being to begin from that Time to preach and teach, for which a perfect Age is required; and the Age of thirty is considered as a perfect Age. For at thirty *Joseph* took the Government of *Egypt*, Gen. xli. at thirty *David* began to reign, 2 Sam. vii. at thirty *Ezekiel* began to prophesize, Ezek. i, &c.

I answer to the third Part of the Question, *that Christ was baptized in the River Jordan, and that it was convenient he should*.

I prove the first Part of this Answer, viz. *that Christ was baptized in the River Jordan*, by the Scripture, Mark i. *Christ was baptized by John in the River Jordan*.

I prove the second Part, viz. *that it was convenient he should be baptized in the River Jordan*; because by the Baptism received in that River, is signified the Entrance into the Kingdom of God, by Christ's Baptism; for thro' the *Jordan* the Children of *Israel* enter'd the Land of Promise, whereby the Kingdom of Heaven is signified, into which Christ's Baptism introduces Men. Whence it is said, *John* iii. *Except a Man be born of Water and of the Spirit, he cannot enter into the Kingdom of God*.

Note, That we'll examine next the Manner of Christ's living.

Our first Question on this Subject is, *If Christ lived according to the Law of Moses, and if it was convenient he should?*

I answer to the first Part of this Question, *that Christ lived according to the Law of Moses*; which I prove by the Scripture, *Matt.* v. *I am not come to destroy the Law, but to fulfil it*. Which *St. Chrysostom* explaining, *Hom.* 16. in *Matt.* speaks thus, *He has fulfilled the Law, first by transgressing none of the Precepts of the Law, and secondly, by justifying by Faith, what the Law could not by the Letter*.

I answer to the second Part, *that it was convenient Christ should accomplish the Law of Moses, and live according to that Law*. Because by observing it, he appear'd to approve it, and that it had a Report to him; and because he left thereby no Occasion to the *Jews* of calumniating him; and because he thus testified, that he was come to deliver Men from the Servitude of the Law, according to this, *Gal.* iv. *God sent forth his Son made of a Woman, made under the Law, to redeem them that were under the Law*.

Note, That from this I'll pass to the Doctrine of Christ.

I'll ask first, *If it was convenient that Christ, as well by himself, as by his Apostles, should preach first, the Salvation to the Jews?* Which I answer in the Affirmative, and which I prove by the Scripture, *Matt.* xv. *I am not sent but unto the lost Sheep of the House of Israel*; and by the following Reasons.

1. Because Christ would shew thereby, that the Promises made to the *Jews*, and not to the *Gentiles*, were accomplished; according to this, *Rom.* xv. *I say that Jesus Christ has been the Minister of the Circumcision*, i. e. the Apostle of the *Jews*, for God's Truth, to confirm the Promises of the Fathers.

2. Because it was agreeable to a just Order and Economy, that Christ's Doctrine should be proposed to the *Jews* first, as already the nearest to God, by their Faith and Worship, and afterwards transmitted to other Nations; for that Reason *St. Jerom* on *St. Matthew*, Chap. xv. *I am not sent but unto the lost Sheep of the House of Israel*, speaks thus; *he does not say that he is not sent to the Gentiles, but that he is sent first to Israel*. Whence we read in the last Chapter of *Isaiah*; *and I will send of those that are saved, viz. of the Jews, to the Nations, and they shall announce my Glory to the Nations*.

3. Because Christ would, thereby, take off all Occasion for the *Jews* to calumniate him.

4. Because by his Passion, and the Victory of his Cross, he has gained a Power and Empire over the *Gentiles*, according to this of the *Apocalypse*, Chap. ii. *He that overcometh, to him will I give Power over the Nations*. Therefore it is not surprizing if, before his Passion, he would not have his Doctrine preached to the *Gentiles*, but only said to his Disciples after his Passion, *Go ye,*

and teach all Nations, &c.

Note, That from Christ's Doctrine I'll pass to his Miracles.

My first Question on this Subject is, *If, and by what Virtue Christ has operated his Miracles, and when, and if it was convenient he should operate them; whether thereby he has sufficiently proved his Divinity?*

To the first Part of the Question I answer, *that Christ has operated a great Number of Miracles*; *John* xi. *What do we? for this Man does many Miracles*.

I answer to the second Part, *that it was convenient Christ should operate Miracles*; to shew that the Doctrine he preached was of God, and that himself was God; whence himself says, *John* x. *Though ye believe not me, believe the Works*. And Chap. v. *For the Works which the Father has given me to finish, bear witness of me*. The general Reason of this is, that Things of Faith exceed the human Reason, and cannot be proved by human Reason, but want to be proved by a divine Virtue.

I answer to the third Part, *that all the Miracles Christ operated, were operated by a divine Virtue*. Because in Miracles is found a certain Mutation of the Order of Nature; which cannot be changed but by a divine Virtue; whence Christ himself says, *John* xiv. *But the Father that dwelleth in me, he does the Works*. And *St. Leo*, *Epist.* 10. c. 4. says, that as there are two Natures in Christ, one divine, which shines with Miracles, and the other human, which is oppressed by Injuries; one of them, notwithstanding, acts with the Communication of the other, viz. inasmuch as the human Nature is the Instrument of the divine Act, and the human Act itself receives its Virtue from the divine Nature.

I answer to the fourth Part, *that Christ began but after his Predication to operate Miracles*. Because his first Miracle was operated at *Cana of Galilee*, which was done but after he had began to preach; therefore, &c. add to this, that Christ operated Miracles to confirm his Doctrine, and to shew that there was a divine Virtue within him.

I answer to the fifth Part, *that Christ's Miracles proved sufficiently his Doctrine*. As it appears from the Scripture, *John* v. where Christ speaks thus; *For the Works which the Father has given me to finish, bear Witness of me*. The Reason is, that the Miracle he operated, surpassed all human Virtue, whence the Blind, to whom he restored his Sight, said, *John* ix. *Since the World began, was it not heard, that any Man opened the Eyes of one that was born blind*. *If this Man were not of God, he could do nothing*.

If it be objected, that this Reason is not sufficient to prove that *Jesus Christ* was God, because others, besides him, had done several Things which surpassed a human Virtue; I can add, that the Miracles which Christ operated, were done in a particular Manner, viz. by his proper Virtue, and not by praying as others did. Whence it is said, *For there went Virtue out of him, that healed them all*. Therefore it is not surprizing if he operated so many Miracles.

Note, That from this I'll pass to Christ's Transfiguration.

I ask, *If Christ was really transfigured, and whether it was convenient he should be transfigured?*

Note, That by the Name of Transfiguration, is understood that State, in which by a Redundancy of the divine Light of the Soul of Christ, over his Body, his Face appear'd radiant as the Sun, and his Cloaths white as Snow; these pre-observ'd,

I answer to the first Part of my Question, *that Christ was truly transfigured*. Because expressly witnessed by the Scripture, *Matt.* xvii. where it is said, *that Christ was transfigured before them, viz. before his Apostles, Peter, James, and John*.

I answer to the second Part, *that it was convenient that Christ should be transfigured before them*; because it was convenient that those to whom he had foretold his future Passion, should be encouraged to it, by a Prospect of the End, to which that Passion was the Way; and he would, by his Example, instruct us to mind the Reward promis'd to those who suffer with Patience and Resignation.

Note, That there are often some little Questions made on Christ's Transfiguration, which it is necessary to resolve here.

It is asked first, If it was convenient to have Witnesses of the Transfiguration, and who they were?

To which I answer, *That Moses, Elias, with Peter, James, and John, were proper Witnesses of the Transfiguration; because, suppose that Christ would be transfigured to shew his Glory to Men, and engage them to desire it, it was convenient he should have those for Witnesses of his Transfiguration, and thus shew them that he not only would glorify those that belonged to the New Testament, designed by the Apostles above-named, but likewise those who pertained to the Old, designed by Moses and Elias: Therefore it is not surprising, if, some Days before his Passion, the Multitude which preceded and followed him, cried to him, Matt. xxi. Hosanna, as desiring their Salvation from him, whom they considered as the Saviour of all.*

It is asked, 2. If it was convenient that the Voice of the Father should be heard in the Transfiguration?

Which I answer in the Affirmative; because the Scripture witnesses that it was heard, and to design the Adoption of the Children of God, by some Conformity of the Image with the Prototype; which Conformity is considered as double. The first is made by Grace in the Baptism, and is imperfect, at least respectively, and the second by Glory, and is perfect, according to this of 1 John iii. *Now are we the Sons of God, and it does not yet appear what we shall be; but we know that when he shall appear, we shall be like him; for we shall see him as he is.* In the Baptism we acquire Grace, and in the Transfiguration we have a Sight of the future Glory; therefore, &c.

It is asked, 3. If the Apostles were so frightened when they heard the Voice of the Father, that they fell on their Faces?

I answer, that this happened to give to understand, that the Excellency of the Glory shewn in that Case, exceeded all mortal Sense and Faculty, according to this of Exod. xxxiii. *No body shall see me, and live; whence St. Jerom says, ad Matt. xvii. That the human Fragility cannot bear the Sight of a greater Glory.*

Note, That from this I'll pass to the Passion of Christ.

My first Question on this important Subject is, *If it was necessary that Christ should suffer, at least for the Salvation of Men; and whether another Manner had not been more convenient to operate that Salvation than by Christ's Passion?*

To the first Part of this Question I answer, *That it was not absolutely necessary Christ should suffer, even for Man's Salvation; either because Christ could have come in an impassible Flesh, or God could have saved Men in another Manner, than by Christ's Passion, as St. Augustin shows it clearly, lib. 13. de Trinit. c. 10. in these Words, That Manner whereby God would deliver us by the Mediator of God and Men, Jesus Christ, we assert to be good and agreeable to the divine Dignity; but let's shew likewise, that God had some other Manner of doing it if he would, since his Power is no way limited.* This Sentiment is confirmed, Isa. xxxiii. *Christ has been offered, because himself would.* Whence it appears, that he was not forced to suffer from the Part of his Father, by whom it was decreed that Christ should suffer.

I answer to the second Part, *That though as I have said in the preceding Answer, it was not absolutely necessary that Christ should suffer, even for Man's Salvation; it notwithstanding can be said, that it was necessary of a Necessity of Convenience, the End supposed, which may be considered either from our Part, or from the Part of Christ, or from that of God.* This I prove by three Reasons founded on the Scripture, and answering to the aforesaid three Ends.

For, 1. It is certain, that by the Passion of Christ we have been delivered according to this of John iii. *Even so must the Son of Man be lifted up, that whosoever believes in him should not perish, but have eternal Life.* 2. Because Christ by the Humility of his Passion, has merited the Glory of his Exaltation; whence it is written in

Luke, the last Chapter, Was it not necessary that Christ should suffer and thus enter into his Glory? 3. Because by Christ's Passion has been accomplished what God had decreed with Regard to him, and what was figured in the Old Testament, Luke xxii. The Son of Man goes according to what has been decreed. And in the last Chapter, These are the Words which I spake unto you, while I was yet with you, that all Things must be fulfilled which were written in the Law of Moses, and in the Prophets, and in the Psalms concerning me.

I answer to the third Part, *that it was not only convenient to Mercy but even to Justice, that Man should be delivered by Christ's Passion.*

I prove, 1. *That it was convenient to God's Mercy that Man should be delivered by Christ's Passion; because as Man could not by himself satisfy for the Sins of the whole human Race, God gave him his Son to satisfy for him, according to this of Rom. iii. Being justified freely by his Grace, through the Redemption that is in Jesus Christ, whom God has set forth to be a Propitiation through Faith in his Blood.* It cannot be added that this was still a greater Effect of God's Mercy, than if he had forgiven Sins without a Satisfaction, according to this of Ephes. ii. *But God who is rich in Mercy, for his great Love where-with he loved us, even when we were dead in Sins, has quickned us in Christ.*

I prove, 2. *That it was convenient or agreeable to God's Justice, that Man should be delivered by Christ's Passion; because thereby an entire Satisfaction has been made for the Sins of the human Race, and consequently Man has been delivered by the Justice of Christ.*

It may be asked in this Place, *If there was a more convenient Manner of procuring Man's Deliverance, than by Christ's Passion?*

Which I answer in the Negative, according to the Sentiment of St. Augustin, lib. 13. de Trinit. c. 10. because the more a Manner is convenient to obtain an End, the more Expedients thereby concur towards obtaining that End; and Man being delivered from Sin by the Passion of Christ, besides that End, viz. the Deliverance from Sin, there are several Things pertaining to our Salvation, which concur to it; as appears by the following Enumeration of them.

1. By that Manner of delivering Man from Sin, he has known how much God loved him, and is excited to love him in his Turn; which Love is explained by the Apostle, Rom. v. *But God commends his Love towards us, in that while we were yet Sinners Christ died for us.*

2. Because by that Manner of delivering Man, he has given us an Example of great Humility, Obedience, and of all other Virtues which Christ practised in his Passion; as it appears from the first of St. Peter ii. *Because Christ also suffered for us, leaving us an Example, that ye should follow his Steps.*

3. By that Manner of delivering Man, he has not only delivered him from Sin, but has likewise merited for him the justifying Grace and everlasting Glory.

4. That Manner of delivering Man has rendered his Dignity greater, from that as Man had been conquered and deceived by the Devil, Man should also in his Turn conquer the Devil; and as Man had deserved Death, Man in dying should conquer Death; according to the first to the Corinthians xv. *But Thanks be to God, which gives us the Victory through our Lord Jesus Christ.*

5. By this Manner of delivering Man, a Man has a greater Obligation to keep himself free from Sin, especially when he must reflect, that he has been redeemed by the Blood of Christ; according to this of the first Epistle to the Corinthians, chap. vi. *For you are bought at a great Price, therefore glorify God in your Body, &c.*

Our second Question on this Subject is, *If Christ suffered in a convenient Place, and at a convenient Time?*

I answered to the first Part of this Question, that Christ suffered in a convenient Place, since he suffered in Jerusalem, which was the most convenient Place for his Passion; not only because the Scripture says it, Luke xix. *It is not convenient that a Prophet should perish out of Jerusalem.* Not only for the Testimony of St. Augustin, lib. vet. & nov. testam. quest. 55. but likewise for several other Reasons, and particularly,

1. Because Jerusalem was the Place chosen of God for to offer the Sacrifices which were the Types of the great Sacri-

Sacrifice of Christ's Passion: Whence the venerable *Bede* in an Homily on *Palm-Sunday*, towards the Beginning says, *That the Hour of the Passion approaching, the Lord would approach the Place of the Passion, viz. Jerusalem, where he arrived six Days before the Passover, i. e. the tenth Moon, according to the Precept of the Law, the Paschal Lamb was carried to be sacrificed.*

2. Because the Virtue of the Passion was to be diffused throughout the whole World, and therefore it was convenient he should suffer in the Middle of the Earth, which is supposed the Situation of *Jerusalem*, that City being called the Umbilic of the Earth; according to *Psal. lxxiv. For God is my King of old, working Salvation in the midst of the Earth.*

3. Because *Jerusalem* was a very convenient Place for his Humility; for as he had chosen the most shameful Kind of Death, he could also die with more Confusion in *Jerusalem*, which was a very famous and populous Place than any where else: Whence *St. Leo, Serm. 1. de Epiph. says, that he who had took the Form of a Servant, had chosen Bethlehem for his Nativity, and Jerusalem for his Passion.*

I may be asked in this Place, if it had not been more convenient that Christ should have suffered in the Temple where the Sacrifices were offered, or at least within the City, than without the City on Mount *Calvary*? Which I answer in the Negative for the three following Reasons.

1. That the Truth should answer to the Figure; for the Bullock and the Goat, for the Sin-Offering, *Levit. xvi.* were burnt without the Camp: Therefore the Apostle speaks thus, *Hebr. xiii. For the Bodies of those Beasts whose Blood is brought into the Sanctuary by the High-Priest for Sin, were burnt without the Camp. Wherefore Jesus also, that he might sanctify the People with his own Blood, suffered without the Gate.*

I answer to the second Part of the Question, *that God suffered in a convenient Time*: Which I prove by the Scripture, the Fathers, and by Reason.

By the Scripture, which insinuates that he suffered when his Hour was come, *John xiii. When Jesus knew that his Hour was come, that he should depart out of this World unto the Father.*

By the Fathers, particularly *St. Augustin, Tract. 8. in Joan.* where he speaks thus, *His Hour came, not of Necessity, but of Will. And lib. quest. vet. & nov. testam. The Saviour did all Things in their proper Places and Times.*

By Reason, because the Passion of Christ was subject to his Will, and his Will was governed by the Wisdom of God, who disposes all Things with Conveniency and Suavity, *Wisdom 8.*

It may be asked, if it had not been more convenient for him to die in an old Age, than to suffer so young; since thereby he had had more Time to enlighten the World with his Light; according to this of *John ix. As long as I am in the World I am the Light of the World.*

I answer in the Negative, and this for two Reasons, 1. To make us value more his Dilection for giving up his Life for us, while he was in the Flower of his Age; 2. To give us to understand, that we were all to rise from the Dead in the same perfect State, himself the Premises of a future Resurrection, did rise, according to this of *Ephes. iv. Till we all come in the Unity of the Faith, and of the Knowledge of the Son of God in a perfect Man, and in the Measure of the Fulness of Christ's Age.*

Note, That from this I'll pass to the Effect of the Passion of Christ, and to the Manner that Effect was operated.

I'll ask, *What was the Effect of Christ's Passion?* if it was, 1. Our Deliverance from Sin, from the Power of the Devil, and from Punishment. 2. Our Reconciliation with God, and the Opening of the Gates of the Kingdom of Heaven; and 3. Christ's Exaltation?

I answer to the first Part of the Question, *that by the Passion of Christ we are delivered from Sin, the Power of the Devil, and from the Guilt of the Pain*; because the Scripture affirms it expressly, *Rev. i. Unto him that loved us, and washed us from our Sins in his own Blood.* If it be asked how that happened? I'll answer, that the Passion of Christ is in three different Manners the proper

Cause of the Remission of Sins; viz. 1. By exciting us to Charity, whereby we obtain the Remission of our Sins; according to this of *Luke vii. Her Sins are remitted, because she has loved much.* And that the Passion of Christ excites us to Dilection may be learned from these Words, *Rom. v. For God commends his Love in us, in that while we were yet Sinners he died for us.* 2. By Manner of Redemption. 3. By Manner of Efficiency, inasmuch as the Flesh which has suffered was the Instrument of the Divinity to banish Sin from the World.

I answer to the second Part, *that Man, by Christ's Passion, was delivered from the Power of the Devil*; because Christ himself insinuates it sufficiently in the Scripture, *John xii. Now shall the Prince of this World be cast out.*

I answer to the third Part, *that Man was by Christ's Passion freed from the Pain of Sin.* 1. Directly, because Christ's Passion was not only a sufficient, but even a superabundant Satisfaction for the Sins of all the human Race. 2. Indirectly, because Christ's Passion was the Cause of the Remission of Sin.

Christ's Passion was also the Cause of our Reconciliation with God, according to the Scripture, *Rom. vi. We are reconciled to God by the Death of his Son.* If I be asked how that happens? I'll answer, that it happens from that it removes Sin whereby Men are made Enemies of God, and are hated by him; according to this of *Wisdom xiv. The Impious and his Impiety are both hated of God.* And *Psal. vii. You have hated all those who operated Iniquity.* Because if it be true that the Effect of a Sacrifice is to appease God, certainly Christ's Passion must have appeased him, since it was a Sacrifice very acceptable to God.

It is objected, that what is rather capable to excite God's Indignation against him, cannot be the Cause of their Reconciliation; that such was the Passion of Christ, whereby Men killed the only Son of God; therefore, &c.

I answer, that Christ's Charity was greater than the Iniquity of those who killed him; and consequently his Passion was more capable to appease God, than to provoke him to Wrath.

Christ's Passion has opened to us the Gates of the Kingdom of Heaven; which I prove by the Scripture and by Reason.

By the Scripture, *Hebr. iv. Christ assisting as the Pontiff of future Happiness, has entered Heaven by his proper Blood, the eternal Redemption being found.* And chap. x. *We have Faith in the Entrance of the Saints through the Blood of Christ.*

By Reason; because he has delivered us as well from our proper, as from the common Sin, whereby the Gates of Heaven were shut against us; according to this of *Isa. xxxv. And it shall be called the Way of Holiness, the Unclean shall not pass over it.* Which is figurated to us by what we read, *Genes. iii. that God after the Sin of Adam had placed a Cherubim holding a flaming Sword at the Gate of the Garden of Eden.*

Christ by his Passion merited also to be exalted, according to this of *Philip. ii. He humbled himself, and became obedient unto Death, even the Death of the Cross; wherefore God also hath highly exalted, &c.*

We'll ask next, *how Christ's Passion operated our Salvation*; whether by Manner of Merit, Satisfaction, Sacrifice, and Redemption; and likewise by Manner of Efficiency?

To which I answer, *that Christ's Passion operated our Salvation, in those five Manners mentioned in the Question.*

1. He operated it by Manner of Merit; because he merited Grace to himself and to us: For he not only merited it to himself as a private Person, but likewise as the Chief of the Church; that it should be diffused throughout all the Members.

Notwithstanding, 1. That the Principle of the Passion of Christ was *ab intrinseco*, and the Principle of Merit must be *ab extrinseco*, because it suffices that he has suffered it voluntarily, for its Principle to be said *ab extrinseco*.

Notwithstanding, 2. That Christ, in the first Instant of his Conception, merited Salvation to himself and to us; because that did not hinder his Passion from having some Effects, the preceding Merits had not.

2. *Christ's Passion has caused our Salvation by Manner of Satisfaction, and even a superabundant one*; because

Christ

Christ suffering by a Motive of Charity and Obedience, has really given more than the Compensation of the Offence requir'd, considering the Excess of his Charity, the Dignity of the Life he laid down in Satisfaction, and the Violence of the Torments he suffer'd.

Notwithstanding that Christ had committed no Sin, yet it ought not to be inferred hence, that he has not satisfied for Men whose Chief he was, and with whom he composed a Kind of mystical Person.

3. *Christ's Passion has caused our Salvation by Manner of a Sacrifice*; because Christ's Passion, as we have already observ'd, was a true Sacrifice, very agreeable to God, and therefore very capable to appease his Wrath. *The ancient Sacrifices of the Saints*, St. Augustin observes, lib. 10. de civit. c. 6. *were various Signs of this Sacrifice, which was represented by several, as one Thing is announced by several Words.*

4. *The Passion of Christ operated our Salvation, by Manner of Redemption*; because it was a super-abundant Satisfaction for our Sins, and for the Guilt of the human Race.

5. *The Passion of Christ has operated our Salvation, by Manner of Efficiency*; if not as a principal, at least as an instrumental Cause thereof. Because, according to the Apostle, 1 Cor. i. *For the Preaching of the Cross is made unto those who are saved, the Power of God*; but the Power of God operates sufficiently our Salvation; therefore the Passion of Christ has operated sufficiently our Salvation, i. e. as an efficient Cause, but not as a principal one, since God alone is the principal Cause of our Salvation. But as the instrumental Cause, the Humanity of Christ being the conjoined Instrument of the Divinity; whence it follows, that Christ's Action, and all his Sufferings, have operated only instrumentally our Salvation, by the Power of the Divinity.

Note, That from Christ's Passion I'll pass to his Death.

I'll ask first, *If Christ died in Reality, whether it was convenient he should die, and whether his Death operated something towards our Salvation.*

To the first Part of this Question I answer, *that Christ really died, and that it was convenient he should die.*

I prove the first Part of this Answer, viz. *that Christ really died*; by the Scripture, Matt. xxvii. where it is said, *that he yielded up the Ghost*, i. e. he yielded up voluntarily, preventing thereby the Office of the Executioner; as we learn it from St. Ambrose on St. Luke; *What is yielded, says he, is voluntary; and what is left is of Necessity.*

I prove the second Part of my Answer, likewise, by the Scripture, John xvii. *It is expedient that a Man should die for the People, lest a whole Nation should perish.* Which Caiaphas said prophetically, according to the Evangelists, and that for several Reasons.

1. That Christ by his Death, should make Satisfaction for the human Race, which had been condemned to die for Adam's Sin, according to this, Gen. ii. *For in the Day that thou eatest thereof, thou shalt surely die.* St. Peter speaks thus of that Satisfaction, in his first Epistle, Chap. iii. *Christ died once for our Sins.*

2. Lest if he had avoided Death, he had been thought to have had a phantastical Body, and to have vanished after he had been seen for some Time upon Earth.

3. To deliver Man from the Fear of Death; whence it is said, Heb. ii. *He was also Partaker of Flesh and Blood, that by Death he might destroy him, that had the Power of Death; that is the Devil. And deliver them, who, through Fear of Death, were all their Life-time subject to Bondage.*

4. That dying corporally, he should leave us the Example of dying spiritually to Sin.

5. Lastly, that by rising from the Dead, he should shew the Power whereby he had conquered Death, and give us the Hope of our future Resurrection, according to the Apostle, 1 Cor. xv. *Now if Christ be preached, that he rose from the Dead, how say some among you, that there is no Resurrection from the Dead?*

To the second Part of the Question I answer, that Christ's Death, considered either *in fieri*, i. e. in his Passion, or *in facto esse*, i. e. in the Separation of the Soul from the Body, has operated something for our Salvation.

I prove the first Part of my Answer, viz. *that the Death of Christ considered in fieri, operated something towards our Salvation*; by what we have heretofore said, that the Passion of Christ was the Cause of our Salvation.

I prove the second Part, viz. *that Christ's Death considered in facto esse, contributed, likewise, something towards our Salvation, if not by Manner of Merit, at least by Manner of Efficiency*; because by Christ's Death, the Death of the Soul, caused by Sin, has been destroyed within us; and likewise that of the Body. That the Death of the Soul has been destroy'd by Christ's Death, appears from this, Rom. iv. *Who was delivered for our Offences.* And that the Death of our Body was likewise destroy'd by Christ's Death, is evident from this other of the same Apostle, 1 Cor. xv. *Death is swallowed up in Victory.*

Our next Question is, *If after Christ's Death, a Separation was made of his Divinity from his Soul and Body; and whether Christ, during the three Days of his Death, was a true Man, and his Body the same in Number alive and dead?*

To the first Part of this Question, I answer, *that the Divinity of Christ has been separated neither from his Soul, nor from his Body, during the three Days of his Death.*

I prove the first Part of this Answer, viz. *that the Divinity of Christ was not separated from his Body during the three Days of his Death*; by the Fathers and by Reason.

By the Fathers, particularly St. John Damascenus, lib. 3. c. 27. who expresses himself in these Terms, on that Subject. *Though Christ is dead as a Man, and his blessed Soul separated from his undefiled Body; his Divinity, notwithstanding, remain'd inseparable from both.*

By Reason, because what's granted by God's Grace, is never revoked without a Fault, since we read, Rom. xi. *That the Gifts and the Vocation of God, are without Repentance*; but the Union of the Divinity with the human Nature in Christ, was granted by Grace; but as it is certain, that there never was any Sin in Christ, the Union of the Divinity with his Flesh, could never be dissolved.

I prove the second Part of my Answer, viz. *that the Divinity was not separated from the Soul of Christ, during the three Days of his Death.* Because if it was not separated from his Body, much less from his Soul, which, in some Measure, can be said more intimately united to the Divinity than the Body.

To the second Part of the Question, I answer, *that Christ was not a true Man during the three Days of his Death.* Because there is no true Man where the Soul is not united to the Body, since the Humanity is a certain Composite of Soul and Body; but during the three Days of Christ's Death, the Soul was not united to the Body, but was rather separated from it: Therefore, &c.

I answer to the third Part of the Question, *that Christ's Body was the same in Number alive and dead, though not the same entirely.*

I prove the first Part of my Answer, viz. *that it was the same numerically*; because the Body of Christ was the same divine Suppositum living and dead: Therefore the Body of Christ was the same numerically alive and dead.

I prove the second Part of my Answer, viz. *that the dead Body of Christ was not the same entirely with his living Body*; because his dead Body had not all that is essential to a living Body; since it had no Life, which is the Essence of a living Body.

Note, That from this I'll pass to Christ's Burial.

I'll ask on this Subject, *If Christ was buried after his Death, and if it was convenient he should be buried?*

I answer to the first Part of this Question, *that Christ was truly buried*; because the Scripture expressly witnesses it, Matt. xxvii. where it is said, *that Christ's Body was wrapped in a clean Linen Cloth.* And Matt. xxvi. where we read, that Christ himself had insinuated that such a Thing would happen, by this he says of Mary Magdalen, *For in that she has poured this Ointment on my Body, she did it for my Burial.* And in the Symbol of the Apostles, Christ is expressly said to be buried.

I answer to the second Part, *that it was convenient Christ should be buried*; because Christ wanted thereby to prove the Truth of his Death; for no Body is buried,

ried, unless his Death be evident; whence it is not surprising, if *Pilate*, before he granted that Christ should be buried, wanted to know if Christ was really dead. 2. To give, by his Example, to those who are buried, Hope of their Resurrection; according to this of *John v. When the Dead shall hear the Voice of the Son of God; and they that hear shall live.*

Our next Question is, *If Christ descended into Hell; into what Hell, and how long he remain'd there?*

I answer to the first Part of the Question, *that really Christ descended into Hell*; which I prove by the Scripture, and the Symbol of the Apostles.

By the Scripture, *Eph. iv. Now that he ascended, what is it but he also descended first into the lower Parts of the Earth?* By the Symbol of the Apostles, *he descended into Hell.*

It may be asked here, *Which was that Hell into which Christ descended?*

To which I answer, that it is very probable, that it was not the Hell of the damned Souls, but only that of the Just; and that he remain'd there till the Day of his Resurrection.

I prove the first Part of this Answer, *viz.* that it is very probable Christ did not descend into the Hell of the Damned, because it is very probable that he who was the true Light, the Light of the World, would not descend into a Place, which is called, *Job x. A Land of Darkness, and of the Shadow of Death, without any Order, and where the Light is as Darkness.* Besides, his sole Presence had been capable to change entirely the Nature of the Place; by making of it a Place of Light and Felicity, from one of Darkness and Torments it is appointed to be.

I prove the second Part, *viz.* that it is probable he descended into the Hell of the Just, and there remain'd till the Day of his Resurrection, because it was convenient his Soul should be there, as long as his Body was in the Sepulchre.

I answer to the second Part of the first Question, on this Subject, *that it was convenient Christ should descend into Hell*; for three Reasons.

1. Because Christ was come to bear our Pain, and to deliver us from our Pains, according to this of *Isaiab liii. Surely he has borne our Grievs, and carried our Sorrows.* And as Man had not only incurred the Death of the Body, but likewise his Descent into Hell; therefore as it was convenient that Christ should die, and thereby deliver us from Death; it was likewise convenient he should descend into Hell, and thereby deliver the Just detain'd there, and us likewise from descending into it; whence it is said in *Hosea, O Death I will be thy Plague; O Hell I will be thy Destruction.*

2. Because it was convenient that the Devil being vanquished, Christ should deliver those he had vanquished from Hell, where they were detained. According to this, *Zech. ix. As for thee also, by the Blood of thy Covenant, I have sent forth thy Prisoners out of the Pit.*

3. That as he had shewed his Power on Life and Death, while upon Earth, he should, likewise, shew it in Hell, by visiting and enlightening that Place, and commanding the Gates thereof to be open'd. According to this, *Psalms xxiv. Lift up your Heads, O ye Gates, and be ye lift up ye everlasting Doors, and the King of Glory shall come in.* Which Words are thus explain'd by the Glossa, *Princes of Hell resign your Power, whereby, till now, you have detain'd Men Prisoners, &c.*

We'll ask next, *Why Christ descended into Hell, if it was to deliver the Saints from thence, if to deliver those who were damn'd, and likewise the Children who had departed this Life with the Original Sin?*

To the first Part of the Question, I answer, *that Christ descended into Hell, to deliver the Just still detained there, though they had made Satisfaction for their Sin.* Because the Scripture witnesses it, in the Passage of *Zechariab* above-quoted. And *St. Augustin* says, *Serm. 2. de resurrect. That Christ descended into Hell, and did break its Gates and Bolts, to set at Liberty all the Just, detain'd there by the Original Sin.*

It may be objected that *St. Augustin, Epist. 59. says, that he could not find of what Advantage the Descent of Christ into Hell had been to the Just existing in Abraham's Bosom, and that it had been of any Service to him, if*

he had delivered them from Pains; therefore it is a Sign that Christ did not descend into Hell to deliver the Just.

I answer that *St. Augustin* in this Place, speaks against some who believed, that the antient Fathers and the Just, before the Arrival of Christ into Hell, suffered Pains; to whom he answers thus, in refuting their Sentiment; *I do not see in what Manner Abraham's Bosom, into which Lazarus was received, can be understood susceptible of Pains.* Therefore when he adds afterwards, that he could not find of what Advantage the Descent of Christ into Hell could be to the antient Just, it must be understood as to delivering them from Torments, because there were none in *Abraham's Bosom*; which, notwithstanding, did not hinder Christ's Descent into Hell, from being of some Service to them with Regard to the Acquisition of Glory.

To the second Part of the Question I answer, *that Christ by his Descent into Hell, did not deliver those who were damned*; because by that Descent he only delivered those he found united to him by a Faith perfected by Charity, which Faith takes off Sin; which was not the Case of those who were damned, therefore, &c. or to the utmost it can be said, that they are to be visited at the Day of Judgment, and then rather to be more solemnly condemned, than deliver'd: According to this of *Zephaniab i. I will search Jerusalem with Candles, and punish the Men that are settled on their Lees.*

I answer to the third Part (which Answer I submit to the Judgment of the Church) *that Christ descending into Hell, delivered the Children who were departed from this Life, defiled with the Original Sin.* Because if I may be allowed to speak according to the advantageous Notion I have of the infinite Charity of Christ; whereby he was entirely actuated during the whole Course of his mortal Life, I imagine that his Descent into Hell had the same Effect, with Regard to those innocent Creatures, who had no Guilt of their own, the salutary Waters of the Baptism have had since, and the Circumcision, which was the Type thereof, had before the Preaching of the Gospel; for what could have been more contrary to his infinite Mercy, than to deprive of the Benefit of his Incarnation, those who were necessarily guilty of another's Guilt, while he extended that Benefit to those who themselves had so often, and so atrociously offended?

Note, That after I have treated of the Things which pertain to Christ's Humiliation, *viz.* of his Passion, Death, Burial, and the like; I must treat next of those which pertain to his Exaltation, *viz.* of his Resurrection, Ascension, &c. beginning by his Resurrection.

I'll ask first, *If, and by what Virtue Christ rose from the Dead, and whether his Resurrection was necessary?*

To the first Part of this Question I answer, *that truly Christ rose from the Dead*, because the Scripture witnesses it expressly, *Matt. xxviii. He is risen, as he said. Mark xvi. He is risen, he is not here. Luke xxiv. The Lord is risen indeed. And John xxi. When he rose from the Dead. 1 Cor. xv. But now is Christ risen from the Dead, and become the first Fruits of them that slept.* That Resurrection was foretold by Christ himself. *Matt. x. They'll deliver him to the Gentiles to be mocked, and scourg'd, and crucified, and he'll rise the third Day.*

I answer to the second Part of the Question, *that Christ rose from the Dead not by a human, but by his own proper divine Virtue*; according to the Scripture, *2 Cor. xiii. For though he was crucified through Weakness, yet he lives by the Power of God.* And Christ himself insinuates it, *John x. No Man takes my Life from me, but I lay it down of myself; I have Power to lay it down, and I have Power to take it up again.*

Note, That by these Words *proper Virtue*, I do not pretend to exclude the Operation of the other Persons, since the Resurrection of Christ from the Dead is an Act *ad extra*, which is common to the whole Trinity; therefore it is said, *Acts i. That God raised up Christ.* And *Rom. viii. Who has raised Jesus from the Dead, has vivified him, &c.* But will only give to understand that Christ's Resurrection is not from him as a Man, or

or by a human Virtue; but is from him as God, or by a divine Virtue which is in him, since he is both God and Man.

Note, also, That from what I have said in this Proposition, it may be inferred that Christ was the Cause of his Resurrection, by his divine Virtue.

I answer to the third Part of the Question, *that it was necessary that Christ should rise from the Dead*; according to the Scripture, *Luke xxiv. The Son of Man must be delivered into the Hands of sinful Men and be crucified, and the third Day rise again*; and for the five following Reasons.

1. That the divine Justice may be made apparent, for to it belongs to exalt those who humble themselves for the Love of God; according to this of *Luke xiv. Whosoever humbles himself shall be exalted.*

2. To confirm our Faith of Christ's Resurrection; for Christ having said that he would rise after three Days, if he had not risen he had been considered as an Impostor: Whence the Apostle speaks thus, *1 Cor. xv. If Christ is not risen from the Dead, our Preaching is vain, and our Faith is vain.*

3. To heighten our Hope; for don't we hope to rise from the Dead, when we see Christ our Chief rising from the Dead? According to this of the Apostle, *1 Cor. xv. Now if Christ preached that he rose from the Dead, how say some among you, that there is no Resurrection of the Dead?* Which is confirmed by this *Job xix. For I know that my Redeemer liveth, and therefore I shall rise from the Earth at the latter Day, and this my Hope resteth in my Bosom.*

4. For the Regulation of our Conduct.

5. For the Compliment of our Salvation.

We'll ask next, *When Christ rose from the Dead, and whether he was the first and sole Mortal who rose from the Dead?*

To the first Part of this Question I answer, *that Christ rose from the Dead the third Day, and that it was convenient he should*; because the Scripture witnesses expressly in the Passages above-quoted, that he rose the third Day. As to its being convenient he should have risen the third Day, there can be no Doubt of it, since the Truth of his Divinity required that his Resurrection should not be deferred to the End; and the Truth of his Humanity and Death required also, that there should be an Interval between his Death and his Resurrection, lest if he had rose immediately after his Death, the Truth of that Death had been questioned, and consequently that of his Resurrection.

I answer to the second Part, *that Christ rose the first of all Mortals, at least of a perfect Resurrection, viz. of that which excludes the Necessity and Possibility of dying*; either because the Scripture witnesses it, *1 Cor. xv.* or because he was the first that rose to an immortal Life, in which consists a perfect Resurrection; according to this of *Rom. vi. For Christ rising from the Dead dies no more.*

I have said, *at least of a perfect Resurrection*, to give to understand, that if it be a Question of the Imperfect, several have arose before Christ, *viz. the Son of the Widow of Naim, the Daughter of the Ruler Jairus, and Lazarus*, whom Christ himself rose before his Death, as it appears from the Scripture.

Our next Question is, *In what Manner Christ rose, whether with a true, entire, and glorious Body, reserving, notwithstanding, the apparent Cicatrices?*

To the first Part of the Question I answer, *that Christ rose with the same Body he had before his Death, and not with a fantastical one.* Because if he had not rose thus, his Resurrection had not been a true one; since a true Resurrection is nothing else but the Reunion of the same Body with the same Soul: For if the Body had been fantastical, the Resurrection had only been apparent, and not true. And Christ, to show that he had rose in his true Body, said to his Disciples, *Luke xxiv. Handle me, and see, for a Spirit has not Flesh and Bones, as ye see me have.*

I answer to the second Part, *that Christ's Body rose entire*, because his Resurrection was perfect; notwithstanding that it was of another Glory, for it suffices that it was of the same Nature.

I answer to the third Part, *that the Body of Christ rose*

glorious; because the Scripture witnesses it expressly, *Philip. iii. Who shall change our vile Body, that it may be fashioned like unto his glorious Body.* And for the three following Reasons.

1. Because the Resurrection of Christ is the Cause and Exemplary of our Resurrection, *1 Cor. xv.* Therefore if the Saints are to rise in a glorious Body, the Body of Christ rose glorious.

2. Because his Body had been humbled in his Passion, in his Death, and in his Sepulchre; therefore it was convenient it should be exalted in his Resurrection.

3. Because it was convenient that the Glory of the Soul of Christ, which, to accomplish the Mystery of our Redemption, had been eclipsed by his Passion and Death, should after his Resurrection appear with some Lustre on his Body.

It may be objected, that a glorified Body is incorruptible; and that Christ's Body could not be incorruptible, since it was palpable. For *what is palpable*, says St. Gregory, *Homil. 26. in Evang. must be corruptible*; therefore Christ's Body did not rise glorious.

I answer, that though his Body was palpable, it had notwithstanding something above the common Condition of a human Body, whereby it was render'd incorruptible, *viz. a Redundancy of Glory on his Body*, according to the Sentiment of St. Augustin, who says, *Epist. 56. that God has made the Soul of so potent a Nature, that from the Plenitude of its Beatitude, reflects on the Body a Plenitude of Health*, i. e. of Incorruption; whence St. Gregory says, *that the Body of Christ, after his Resurrection, was of the same Nature, but of another Glory.*

I answer to the fourth Part, *that the Body of Christ, though it rose glorious, rose, notwithstanding, with the Cicatrices of the Wounds*; and that it was convenient it should rise in that Manner.

That he rose with the Cicatrices of the Wounds he received in his Passions, appears from the Scripture, *John xx. where Christ says to St. Thomas, reach hither thy Finger, and behold my Hands; and reach hither thy Hand, and thrust it into my Side.*

That it was convenient Christ should rise with the afore-said Cicatrices, is evident from five Reasons, 1. That Christ should be hence glorified: For the venerable Bede says, on the last Chapter of St. Luke, that Christ did not preserve his Cicatrices out of an Impossibility of curing them, but wore them in perpetual Remembrance of the Victory he had gained. 2. To strengthen the Heart of his Disciples in the Faith of his Resurrection. 3. To be heard always of his Father, when he should plead for us, by shewing what Kind of Death he had suffered for us. 4. That by his Death he should insinuate to those he had redeemed, what he had done to accomplish their Redemption, to excite them thereby to suffer something patiently in their Turn. 5. To convince his Enemies that they are justly condemned.

Notwithstanding what is said, *1 Cor. xv. that the Dead shall rise incorruptible*; because those Cicatrices do not import any Imperfection, or Defect; but are rather an Increase of Glory; since they are the Marks of Power.

We'll ask next, *If Christ's Resurrection be the Cause of ours, and of our Salvation?*

To the first Part of this Question, I answer, *that Christ's Resurrection is the Cause and Exemplary of the Resurrection of Bodies*; because it has an effective instrumental Power, and acts by the Power of the Divinity; and because what is first in any Gender is a Rule for the others; but Christ's Resurrection is the first in the Gender of a perfect Resurrection; according to this of the Apostle, *1 Cor. xv. But now is Christ risen from the Dead, and become the first Fruits of them that slept.* For since by Man came Death, by Man came also the Resurrection of the Dead; because the Word of God is the Principle of the human Vivification; according to what himself says, *John v. For as the Father raises up the Dead and quickeneth them, even so the Son quickeneth whom he will.*

To this it may be objected, that if Christ's Resurrection was the Cause of ours, it would be either a meritorious or an efficient, or an exemplary Cause; but it is neither, 1. Because Christ was no longer in the Way, and therefore could not merit, since none but those who are on their Journey through this World can merit. 2. Because Christ's

Christ's Resurrection had neither a corporal nor spiritual Contact to the Dead: Not a corporal one, because of the Distance of the Place, and Time; nor a spiritual Contact by Faith and Charity, since the *Pagans* will rise from the Dead; whence it can in no Manner be said the efficient Cause of our Resurrection. 3. Because God does not want to raise the Dead, to look on an Exemplary placed *ad extra*; therefore the Resurrection of Christ was not the exemplary Cause of our Resurrection; and therefore, &c.

I answer, that Christ's Resurrection is not, properly speaking, the meritorious Cause of ours; but that it is, notwithstanding its efficient and exemplary Cause.

1. It is its efficient Cause, because Christ's Humanity, according to which he rose from the Dead, is the Instrument of the Divinity, and operates with his Power; for to that Virtue belongs the Quickning of the Dead.

But how can it be understood, say you, that that same Virtue extends itself as well towards the Resurrection of the Bad, as towards that of the Good?

To which I answer, that it can be easily understood, if we consider that the primary Cause of the human Resurrection is the divine Justice; from which Christ, as the Son of Man, has the Power to administer Judgment; since all Men, good and bad, without Distinction, are submitted to Christ's Judgment.

2. The Resurrection of Christ is the exemplary Cause of ours; because what is most perfect, is the Original of what is less perfect in its Manner; but Christ's Resurrection is most perfect; therefore it is the Original of our Resurrection, not that God wants an Original, but because it is necessary that on our Part we should be conform to Christ's Resurrection; according to this of *Phil. iii. Who shall change our vile Body that it may be fashioned like unto his glorious Body.*

Note, That I must resolve in this Place some small Questions relating to the Manifestation of Christ's Resurrection.

It is asked, 1. *If Christ's Resurrection was presently manifested, or must have been manifested to all, or only to some particular Persons?*

I answer, that it was not presently manifested to all without Distinction, but only to some certain Persons selected for that Purpose; that by them it should be manifested to others; according to this of *Acts x. Him God raised up the third Day, and shewed him openly, not to all the People, but unto Witnesses chosen before of God.*

I answer, 2. That it was convenient that Christ's Resurrection should be manifested at first, but to those only chosen of God, and by them to others, because this Manner of acting in the Manifestation of supernatural Things is common to God, in the Sentiment of *St. Denis, lib. de celest. hierarch. c. 1. This is, says he, the Law divinely instituted, that they should be immediately revealed to Superiors, and by their Means communicated to Inferiors; as it appears in the Economy established among the celestial Intelligences.*

It may be asked, 2. *If Christ rose in the Absence of his Disciples, and whether it was convenient he should rise in the Absence of all his Disciples?*

I answer, 1. *That Christ arose from the Dead in the Absence of all his Disciples*; because we read in the last Chapter of *St. Mark*, that *Mary Magdalen* came first to the Sepulchre, and learned from the Angel that he was risen from the Dead.

I answer, 2. *That it was convenient Christ should rise in the Absence of his Disciples*; because, in that he observed the Order which God had established, which is, that what was above Man's Apprehension, should be revealed to them by Angels; according to *St. Denis, de celest. hierarch. c. 4.* and it is certain that Christ rising from the Dead, did not return to a Life commonly known to Men, but to an immortal Life, and conform to God; according to this of *Rom. vi. For that he lives to God*; therefore Christ's Resurrection should not have been immediately seen by Men.

It may be objected to this, that it was convenient those should see Christ's Resurrection who were to witness it; according to this of *Acts iv. And with great Power gave the Apostles witness of the Resurrection of*

the Lord Jesus; therefore it was convenient they should see the Resurrection.

I answer, that the Apostles could testify of Christ's Resurrection as Eye-witnesses, because they had seen alive him whom they knew to be dead.

It may be asked, 3. *If Christ appeared to his Disciples in another Form?*

Which I answer in the Affirmative, because the Scripture witnesses it expressly, *Mark xvi. After that he appeared in another Form to two of them as they walked, &c.* Though notwithstanding we must not say that Christ's Apparition was fictitious, because Christ does not deceive.

It may be asked, 4. *If, and how long Christ conversed with his Disciples, and must have conversed with them?*

I answer, 1. That Christ conversed sometimes with his Disciples after his Resurrection; which we learn from the first Chapter of the *Acts of the Apostles.*

I answer, 2. That his Conversation with them was not continual; because it is said, *John xx. that eight Days afterwards he appeared to his Disciples.*

I answer, 3. That Christ ought not to have conversed continually with his Disciples, lest he should appear to have returned to the same Life he had before, whence he says to them, *Luke xxiv. These are the Words which I spake unto you while I was yet with you, i. e. as the venerable Bede observes, while I was in the same mortal Flesh you are in.*

Note, also, That from this I'll pass to Christ's Ascension.

My first Question, on this Subject, is, *If, and according to what Nature Christ ascended into Heaven, and whether it was convenient he should ascend into Heaven?*

To the first Part of this Question, I answer, that Christ ascended truly into Heaven. Because Christ himself witnesses it, *John xx. in these Words: I ascend unto my Father and your Father, and to my God and your God.* And we read *Mark xvi. So then after the Lord had spoken unto them, he was received up into Heaven, and sat on the right Hand of God.*

I answer to the second Part, that Christ ascended into Heaven according to his human Nature, and not according to the divine, though he ascended into it by a divine Virtue. Because he ascended according to that Nature, to which it belongs to ascend; but it only belongs to the human Nature to ascend, not to the divine; because the divine Nature, as well in itself as from itself, is exalted in such a Manner that it cannot be raised higher; and because the Ascension into Heaven imports a local Motion, which is not at all agreeable to the divine Nature.

I have said, though he ascended by a divine Virtue, because Christ did not ascend into Heaven by the Virtue of his Humanity. Whence *St. Augustin, Serm. de ascens. Dom.* which is the 176 in Order, says, that what he was crucified in was from us, and from him that he ascended into Heaven. In this Sense *St. Thomas* says, that it can be said that Christ ascended into Heaven according to his divine Nature.

To the third Part of the Question, I answer, that it was convenient Christ should ascend into Heaven. Because it was convenient that he should be in a Place proportioned to the Condition, and to the immortal and incorruptible Life he began after his Resurrection: Therefore it was convenient he should ascend into Heaven, since the Place inhabited by us Mortals is not proportioned, its being a Place of Generation and Corruption.

This Sentiment is confirmed, from that Christ ascending into Heaven has not entirely abandoned us, since he is always present to us by his Divinity, according to this of the last Chapter of *St. Matthew, I am with you always, even unto the End of the World.* For, notwithstanding by his Ascension the Faithful have been deprived of his corporal Presence, it suffices that we can say that he has not entirely abandoned us.

Our next Question is, *If and in what Sense Christ can be said to have ascended into Heaven by his proper Virtue?*

Note, 1. That we can consider two Virtues in Christ, answering to his two Natures, viz. one divine, and the other human.

Note, 2. That the human Virtue can be considered either as purely natural, and proceeding from natural Principles,

Principles, or as a Virtue of Glory distinct in Christ from the divine Virtue.

Note, 3. That it is asked here, if Christ not only ascended into Heaven by his proper Virtue, in that Sense that he ascended by his divine Virtue; but likewise that he ascended by his human Virtue, if not natural, at least that Virtue which is said of Glory?

I answer, 1. *That in that Sense Christ can be said to have ascended into Heaven by his proper Virtue, because he ascended by his divine Virtue.* This Answer wants no clearer Explication, since it appears from what we have said already on this Subject, that the divine Virtue pertained no less to Christ, than the human Virtue, since he was both God and Man.

I answer, 2. *That Christ can be said to have ascended into Heaven, by his proper human Virtue, not the natural, but that of Glory.* Not by a natural Virtue, because such an Ascension surpasses that Virtue. But by that of Glory, because that Virtue was agreeable to it, derived from his blessed Soul to his Body, by which Virtue, the Body was instantly where the Soul wanted it to be.

From what I have said it may be infer'd, that Christ ascended in two Manners into Heaven by his proper Virtue, 1. By a divine Virtue, and, 2. By the Virtue of a blessed and glorified Soul, moving the Body at Pleasure.

Note, That from this I'll pass to the Mission of the Holy Ghost.

I'll ask, *If Christ promised his Disciples to send them the Holy Ghost, and whether he accomplished his Promise, when, and how, and with what Circumstances?*

Note here, in few Words, that there can be considered two Sorts of Mission in divine Things, one active, and the other passive. The active is nothing else but the Production of the divine Person we suppose sent, with some Habitude of the same Person to some certain Term, in which he begins to be in some new Manner, such as he was not before.

2. That the Mission, especially the passive, can be considered either as visible or as invisible; I'll explain both Missions in my Treatise of the Trinity, as properly belonging to it; these pre-observ'd,

I answer to the first Part of the Question, *that Christ promised his Disciples to send them the Holy Ghost*; because witnessed in several Places of the Scripture, *John xiv. And I will pray the Father, and he shall give you another Comforter; even the Spirit of Truth.* Chap. xvi. *If I go I'll send him to you.*

I answer to the second Part, *that Christ, fifty Days after his Resurrection, and ten after his Ascension, sent the Holy Ghost he had promised, who came on the Disciples while they were assembled together, and descended on them in the Manner of a Wind, and under the Form of fiery Tongues.* Because we read that it happen'd thus, *Acts ii.* in these Words, *And when the Day of Pentecost was fully come, they were all with one Accord in one Place, and suddenly there came a Sound from Heaven, as of a rushing mighty Wind, and it filled all the House where they were sitting. And there appeared unto them cloven Tongues, like as of Fire, and it sat upon each of them: And they were all filled with the Holy Ghost, and began to speak several Languages, as the Spirit gave them Utterance.*

It may be asked with Regard to the Manner and Circumstances of the Holy Ghost, *Why he descended on the Day of Pentecost, in which a Feast was celebrated among the Jews, in Memory of the Promulgation of the Law on Mount Sinai, fifty Days after that of the Passover?*

I answer that this happened to insinuate, that Christ was come to imprint his Law on the Mind of Men, i. e. the Law of Grace he had preached, the old Law being but the Figure thereof; whence it happen'd, that the same Day the old one was given, the new was promulgated, tho' in a different Manner; for the old Law was promulgated, amidst Thunder and Lightenings, because it was a Law of Fear, threatening Death; was promulgated on Mount Sinai, and given on two Tables of Stone, because given to obdurate Men, whose Hearts were harder than Stones; but, on the contrary, the new Law was imprinted with Sweetness, on the carnal Hearts of Men.

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It is asked, 2. *Why the Holy Ghost came so suddenly.*

I answer, that he descended in that Manner, to give us to understand, that the Holy Ghost visits us when he pleases, and not when we please, and therefore we should be always prepar'd to receive him. The Reason why he bloweth when he pleases, *John iii.* because he bloweth of a pure Mercy.

It is asked, 3. *Why he came in Manner of Wind, and even of a violent one, and with Noise?*

I answer, 1. That the Holy Ghost came in the Manner of Wind, to give to understand, that as Wind cools; and separates the Corn from the Straw; likewise the Holy Ghost temperates the Heat of our Concupiscence, and purifies our Soul of the least Sin and Imperfection.

I answer, 2. That that Wind was vehement; because the Holy Ghost wanted to signify thereby, with what Zeal we should apply ourselves to the Practice of all the Christian Virtues; to which he does not force nor necessitate our Will, but only attracts it with Sweetness, that it may consent freely. For a Man excited by divine Inspiration, is like a Ship on the Sea, which runs full sail towards the Place of its Destination.

I answer, 3. That that Wind was with Noise, to give to understand, that the Holy Ghost operates great Miracles in the Elect, and by the Elect, which are heard throughout the whole World.

It is asked, 4. *Why it is said, that that Wind filled the House where the Disciples were assembled?*

I answer, that it is said for several Reasons, 1. To give to understand, that the Holy Ghost gives the Grace with a far greater Plenitude in the new Law, than he used to give it in the old one. 2. That the Holy Ghost descending into our Soul, fills all its Faculties.

It is asked, 5. *Why the Holy Ghost descended in Form of Tongues?*

I answer, that he descended in that Form to signify, that as the Tongue makes a Difference between Sweetness and Bitterness, likewise by him we make a Difference between Good and Evil.

It is asked, 6. *Why those Tongues were fiery?*

I answer, that this happen'd for several Reasons, but more particularly to give to understand, that as Fire has the Faculty to purify, to light, to heat, to ascend upwards, to unite itself, and to transform into itself, all it is united with; likewise the Holy Ghost produces all those Effects in our Soul. For 1. It purifies it, by consuming all its Imperfections. 2. He illuminates our Understanding, that it may be more certain of the Truth, than if we were to see it with our Eyes. 3. He inflames our Heart with the Fire of Charity towards God and our Neighbours. 4. He raises our Heart from the Earth, that our Conversation may be in Heaven. 5. He unites himself so intimately with our Soul, and unites it so intimately with him, that it is but one same Spirit with him.

We'll ask next, *Which were the Motives, and the End of the Descent of the Holy Ghost?*

I answer, 1. That there were three principal Motives of the Descent of the Holy Ghost.

The first Motive is taken from the infinite Charity of the Father, which as it had excited him to send his only Son to be our Redeemer, *John iii.* it likewise excited him to send the Holy Ghost to sanctify our Souls.

The second is taken from the Merits of Christ, who by his Passion and Death obtained us that Gift.

The third is taken from our Miseries and Wants, which moved the Father to send us the Holy Ghost.

I answer, 2. That the Holy Ghost was sent by the Father and the Son, particularly for these Ends, 1. To be our Protector, Advocate, and Comforter, after Christ, 2. To be our Master and Doctor after Christ. 3. To let the Apostles know, inwardly, what Christ was, that they should afterwards witness it to the whole World. 4. To reprimand the World for their Sins.

1. That he was sent to be our Protector, Advocate, &c. after Christ, Christ himself witnesses it by his Promise, *John xiv. I'll pray the Father, and he'll send you another Comforter,* i. e. another Protector, who will be always ready to assist you in your Necessities. A Consolator, who will relieve you in your Afflictions; and an Advocate who will intercede for you.

2. That he was sent to be our Master and Doctor, Christ

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Christ himself witnesses it likewise, when he says, *John xiv. and xvi. When that Spirit shall come whom my Father will send in my Name, he'll teach you all Truth; at least all that's necessary for your Perfection and Salvation.*

3. That he was sent to witness inwardly to the Apostles what Christ was, that they should afterwards witness it to the whole World, is evident from that the Holy Ghost was sent to teach, and to bear the same Testimony which Christ had bore of himself, while he conversed with them, and they should be so well convinced of the Truth as to be ready to suffer all Sorts of Torments, and even die in its Defence.

4. That he came to reprimand the World of their Sins, is witnessed by the Scripture, *John xvi. And when he is come he will reprove the World of Sin, and of Justice, and of Judgment, i. e. He will cause that the Apostles, and all those on whom he shall descend, shall reprove the World, 1. Of Sin, or of that they do not receive his Faith, nor observe his Law. 2. They'll reprove of Justice, i. e. bearing Testimony of the Life and Doctrine of Christ, and of the Holiness of his Law. 3. Lastly, of Judgment, shewing Man what Sentence Christ pronounces against Sin, and against the Devil.*

Note, That I'll conclude this Treatise by some Observations on the general Resurrection of the Body, and on the Universal Judgment.

I'll ask, first, *If there is to be a general Resurrection of the Bodies before the universal Judgment, how, and when it will happen?*

To the first Part of the Question I answer, *that there is to be a general Resurrection of the Bodies before the universal Judgment, i. e. of all Men, as well of the Elects as of the Reprobates.*

I prove the first Part of this Answer, viz. *that there is to be a general Resurrection of the Bodies, &c. By the Scripture and by Reason.*

By the Scripture, *Job xix. For I know that my Redeemer liveth, and that I am to rise from the Earth, and to be environed with my Skin.*

By Reason, because the Members must be conform to their Chief; but Christ who is our Chief, rose from the Dead and lived, therefore we must rise from the Dead and live.

I prove the second Part of the Answer, viz. *that the Resurrection will be of all Men, good and bad, without Distinction.* By the Scripture, *John v. All that are dead shall hear the Voice of the Son of God, and shall come forth; they that have done Good unto the Resurrection of Life; and they that have done Evil unto the Resurrection of Damnation.*

To the second Part of the Question I answer, *that the general Resurrection is to be supernatural, because it is not to be made according to Nature, a Regress from the Privation to the Habit; but Death is the Privation of Life: Therefore the Resurrection, which consists in the Return from Death to Life, is not natural, but absolutely supernatural and miraculous.*

From what I have said it may be inferred, that the general Resurrection is to be attributed to God, according to this of *1 Thess. iv. For the Lord himself shall descend with a Shout, with the Voice of the Archangel, and with the Trumpet of God.* By that Trumpet St. Thomas understood the Voice of the Son of God, mentioned *John v.* which notwithstanding does not hinder, as the same Doctor observes, but he may use the Ministry of Angels, in those Things which are to be as Preparations to the Resurrection. Hence it appears, that as the Soul was immediately created of God, it will be likewise immediately re-united to the Body by him.

It may be inferred, 2. That the Resurrection precisely considered, as the Union of the Soul with the Body, is to be made in an Instant; which is insinuated, *1 Cor. xv. We shall all rise, in a Moment, in the twinkling of an Eye, at the last Trumpet, &c.* and the Reason is, that God is to make use then of his infinite Virtue; but successively it is to be made, as to what belongs to the Ministry of the Angels, so quickly, that the Time will be imperceptible: *Ezekiel* insinuates that Succession, Chap. xxxvii. *And the Bones, says he, came together, Bone by Bone. And when I beheld, lo, the Sinews and the Flesh came up upon them, and the Skin covered them above; and*

there was no Breath in them.

I answer to the third Part of the Question, that it is certain that the general Resurrection is to be at the End of the World; but that it is not certain when that End of the World will be.

That the general Resurrection is to be at the End of the World, is inferred from these Words of *Job, c. xiv. So Man lies down, and rises not, till the Heavens be no more, they shall not awake; nor be raised out of their Sleep.* Here we must observe two Things, 1. That by that Sleep, must be understood the Sleep of Death. 2. That the Heavens are not to be destroyed in the Manner *Job* understands it, but at the End of the World.

That it is not certain when that End of the World is to be: We learn it from the Scripture, *Matt. xxiv.* where it is said, that it is hidden from the Angels, and from the Apostles, tho' they knew more of their divine Master's Secrets than any Body else.

Our next Question on this Subject is, *If the Bodies of the Good and of the Bad are to rise entire, and with all that was of the Truth of human Nature; likewise at what Age and in what Sex they are to rise?*

I answer to the first Part of this Question, *that the Bodies are to rise entire, and with all their Members;* either because they are perfect Works of God, or because the other Members are much more of the Truth of human Nature than the Hair; but the Hair is to be restored in the Resurrection, according to St. *Luke xi. Not one Hair of your Head shall perish; therefore, &c.*

I answer to the second Part, *that we'll all rise young;* according to the Apostle, *Ephes. iv. Till we all come in a perfect Man, and in the Measure of the Plenitude of Christ's Age;* but Christ rose in a youthful Age, as St. *Augustin* teaches it, *lib. 22. de civit. c. 15.* therefore we'll rise in that Age. Which Sentiment I confirm by this Observation, that as Man was created without any Defect of Nature, likewise the human Nature will rise without any Defect; because God's Works are perfect as well in the Resurrection as in the Creation.

It may be asked perhaps, *If it would not be more convenient Man should rise in an old Age, which is far more venerable and more worthy of Respect?*

Which I answer in the Negative, because that Age does not borrow its Venerability from the Condition of the Body, which is then attended with several Defects, but from the Wisdom of the Soul, which is supposed acquired by a long Experience. But the Elects will claim the Respect due to old Age, by the Plenitude of the divine Wisdom their Soul will be inebriated with.

I answer to the third Part of this Question, *that every one shall rise according to their Sex;* because God will repair in Man in the Resurrection, what he made him in the Creation; but in the Creation he made him Male and Female; therefore he'll repair both Sexes in the Resurrection, according to St. *Augustin, lib. 22. de civit. c. 17. Those think better, who believe that both Sexes will rise.*

We'll ask next, *If in the risen Bodies of the Elect will be those Perfections, viz. Impassibility, Subtlety, Agility, and Light, and which?*

Note, 1. That the Name of Perfection can be considered in two Manners, 1. In general, for any Perfection, either of the Soul or of the Body; as well natural as supernatural; in that Manner the Quickness of the Genius, the Vivacity of Memory, Beauty, Strength, Grace, and all the Virtues either infused or acquired, are called Perfections. 2. In a more strict Sense, for the Perfections acquired by Art, as Fencing, Riding, &c.

2. It is easily inferred from what I have said, that it is Question here of the Perfections of a glorious Body, flowing from the Soul; and that is asked: a glorious Body has those four Perfections, viz. *Impassibility, Agility, Quickness, and Light;* which Question I'll answer by explaining those four Perfections in the following Order.

I answer, 1. *That the Bodies of the Elect will be impassible;* because there will be in them a certain supernatural Quality, flowing from the blessed Soul, inherent to the glorious Body, and excluding from it all corruptive Passion. Whence it is not without Reason that the Apostle

St. Paul says, 1 Cor. xv. that the Body sown in Corruption shall rise in Incorruption; and that sown in Weakness shall rise in Power.

It may be asked, with Regard to the Impassibility of the Bodies of the Elects, *if it is to be equal in all?*

To which I answer, that it is to be equal in all, if it be considered in itself; for thus consider'd, it imports only a Privation, or Negation, which will be equal in all: But consider'd according to the Cause, it is not to be equal; the Reason of this is, because its Course is the Authority of the Soul over the Body, which proceeds from that the Soul itself enjoys God without Mutation, and that Fruition will be greater in one than in the other: Therefore, &c.

It may be asked, 2. *Whether the Impassibility excludes Sensation in actu, from the glorious Bodies?*

To which I answer in the Negative; because, according to Aristotle, lib. 1. de anim. text. 19. the Animated is distinguished, by the Sensation and Motion, from the Inanimated; but there is a Motion in actu in the Blessed: Therefore there will be in them a Sensation in actu, whence it is said, Rev. i. *All Eyes shall see him*

From this Answer it is inferred, that it is very probable, that after the Resurrection, there will be, in the Blessed, all the Senses in actu; because the Power joined with the Action is more perfect, than when it is not joined; therefore as human Nature is to be in the greatest Perfection, in the Blessed, it follows hence, that all the Senses will be in actu in them.

I answer, 2. That *there will be likewise, in a glorious Body, after the Resurrection, that Perfection called Subtily*; because, in a glorious Body, there will be a supernatural Quality flowing from the blessed Soul on the Body, and rendering it penetrative of another Body, and co-existing with it in the same Place; therefore there will be in it a Subtily which consists in that afore-said Quality. All which is insinuated by the Apostle, 1 Cor. xv. where he says, that that Body which is sown animal shall rise spiritual; not that in fact it will be changed into something spiritual, but into something, in some measure semblable to a Spirit, because it will surpass all kind of corporeal Subtily.

From this Answer, may be learned the Reason why Christ entered into the Room where the Disciples were assembled, though the Doors were shut, &c.

It may be asked, *If that Subtily renders a glorious Body impalpable?* Which I answer in the Negative; because after his Resurrection Christ's Body was still palpable, as Christ himself insinuates it in the last Chapter of St. Luke, *Feel and see, for a Spirit hath neither Flesh nor Bones*. Whence St. Gregory, lib. 14. moral. c. 19. says, that Eutyches had erred, in that he pretended that our Body after the Resurrection should be impalpable.

It may be asked, 2. *If a Blessed has in his Power to hinder a glorious Body from being felt by another glorious Body?* Which I answer in the Affirmative; because that belongs to it from a divine Virtue.

I answer to the third Part of the Question, *that there will be in the glorious Bodies that Perfection called Agility*; because in them there will be a supernatural Quality flowing from the blessed Soul on the Body, and rendering it mobile with Celerity in all the Difference of Positions; according to this of Isa. xl. *They'll take the Wings of Eagles and will fly*. But though a glorious Body is to move with that Celerity, we must not imagine that its Motion is to be made in an Instant, otherwise the Body moved would be at the same Instant, in the Term from which, and in the Term to which, and in all the intermediate Places, which cannot be said, since Motion imports a Succession; therefore, &c.

It may be asked, with Regard to the afore-said Agility, *If the glorious Bodies would be moved thereby without Trouble?* Which I answer in the Affirmative; because the Scripture insinuates it, Isa. xl. *They shall run and not be weary, and they shall walk and not faint*. St. Gregory, homil. 34. says, that they shall run within God, wherever they'll be sent. Whence consequently, those who are to run will not be deprived of the beatifick Vision.

I answer to the fourth Part of the Question, *that in the risen Bodies there will be a Radiancy*; because in them there will be a supernatural Quality flowing from the

Soul on the Body, which will render it luminous and diaphan, like a fine Glass, whereby will be seen the marvellous Harmony subsisting between the inward Parts of the Body. It is by reason of this Perfection, the Scripture says, *that the Just shall shine like the Sun in the Kingdom of their Father*.

It can be inferred, 1. From what I have said of this Perfection, that where there will be a greater Glory of the Soul, there will be a greater Radiancy of the Body; and thus the Glory of the Soul will be known in the glorious Body; as the Colour of a Body contained in a Glass Vessel is easily seen through it.

2. That the Glory of a Body will not deprive it of its Nature, but rather perfect it: Whence the Colour due to a Body according to the Nature of its Parts shall remain in it, though with the Addition of the Radiancy of the Soul.

Our next Question is, *If the Bodies of the Reprobates shall rise with their Defects, and with Passibility and Corruption?*

To the first Part of this Question I answer, *that some Defects shall remain in the risen Bodies of the Reprobates, but not all*.

Some of their Defects shall remain, at least those Defects which proceed naturally in a human Body from natural Principles; such as Ponderosity, Passibility and the like. Notwithstanding this, 1 Cor. xv. *That the Dead shall rise uncorruptible*; for it must be only understood that they'll rise without any Diminution of their Members, lest there should be something in the Reprobates which could hinder in them the Sense of the Torments, or at least hinder the Pain from being universal in the Body, in which it would not be universal if a Member was wanted.

All the Defects will not remain in them; because those will not remain in them which proceeded only from Corruption, and Debility of Nature, or of the natural Principles, such as [all Sorts of Diseases, &c. For if there was in them some Disease, it would hinder, or at least diminish the Sense of the Pain, inasmuch as it would debilitate the Organs.

I answer, 2. *That the Bodies of the Damned are to be uncorruptible*; because the Scripture insinuates it, Rev. ix. *And in those Days shall Men seek Death and shall not find it; and shall desire to die, and Death shall flee from them*.

I prove this by Reason, because Corruption is a certain Specie of Mutation; but after the Resurrection there will be no more Mutation, since the Principle of Motion will be wanted, viz. the Motion of the Heavens, which Philosophers consider as the first Alterrative: Whence it is not surprizing if the Motion of the Heavens failing, the Corruption is also to cease in the Bodies of the Damned, though composed of Contraries. The Pagan Philosophers have not known this Cessation of the Motion of the Heavens; whence it is not surprizing if they imagined that all Bodies composed of Contrary tends naturally towards Corruption. This serves to the divine Justice, that the Damned living perpetually, may be perpetually punished.

I answer, 3. *That the Bodies of the Damned will remain eternally passible, though they are never to be consumed by the Fire*; because it is so decreed by God, that the Body which has co-operated with the Soul towards committing Sin, should be perpetually punished with her, and consequently remain passible.

Note, That as the universal Judgment is to follow immediately the general Resurrection; it is proper I should give my Pupil Theologian some Instructions with Regard to it, that he may be capable to confute those who have the Impiety to deny both the Resurrection and Judgment.

My first Question on this dreadful Subject is, *If, and at what Time, and in what Place the universal Judgment is to be; and whether in it, it will be argued by vocal Locution?*

I answer to the first Part of the Question, *that there will be an universal Judgment*. Because the Scripture insinuates it, by these Words of Christ, Matt. xii. *The Men of Nineveh shall rise in Judgment with this Generation and shall condemn it*. Likewise, John v. *And shall come forth, they that have done Good, unto the Resurrection of*

of Life; and they that have done Evil unto the Resurrection of Damnation.

I answer to the second Part of the Question, *that the Time of the universal Judgment is unknown and uncertain.* Because the Scripture witnesses it expressly, *Matt. xiii.* in these Words, *No Body knows of the Day or Hour, neither the Angels, nor the Son, except the Father.*

If I be asked, *In what Sense the Son is said not to know it?* I'll answer, that the Son is said not to know it as Man, but not as God.

I answer to the third Part of the Question, *that tho' we are not certain of the Place of the universal Judgment, it is notwithstanding probable that it will be in the Valley of Jehosaphat.* According to this, *Joel iii.* *I will also gather all Nations, and will bring them down into the Valley of Jehosaphat, and will treat with them there.* And because it is probable, that in his second Coming he'll descend into a Place near the Mount of Olives, whence he ascended into Heaven, as it is inferred from this, *Acts i.* *This same Jesus which is taken up from you into Heaven, shall so come, in like Manner as ye have seen him go into Heaven;* but the Valley of Jehosaphat is very near the Mount of Olives: Therefore, &c.

It may be objected, that the Valley of Jehosaphat, is not sufficient to contain so innumerable a Multitude of Men; therefore that it is not probable that the univer-

sal Judgment is to be in that Valley,

I answer, that it is very true, that the Valley of *Jehosaphat* is too narrow to contain all the human Race, otherwise than by a Miracle; which Christ can operate on that Occasion.

I answer to the fourth Part of the Question, *that it is very probable the universal Judgment will be made mentally, and not by a vocal Location.* Because if a vocal Location was requir'd in the universal Judgment, either with Regard to the Discussion, or the Accusation of the Bad, and the Commendation of the Good, or with Regard to the different Sentences which are to be pronounced, it would take much more Time than is convenient, according to the Sentiment of *St. Augustin, lib. 20. de civit. c. 4.* Therefore, &c.

This Sentiment of mine is confirm'd, by that the Accusation, Defence, &c. is to be made mentally; therefore the Sentence which is to be agreeable to the Accusation, Defence, &c. is to be pronounced mentally; which I infer from this Passage, *Rom. ii.* *Their Conscience also bearing witness, and their Thoughts the mean while accusing, or else excusing one another. In the Day when God shall judge the Secrets of Men by Jesus Christ.*

I have said *very probable*, to insinuate thereby, that it is not certain of a physical Certitude.

J U D A I S M.

J U D A I S M, is the Profession of the Doctrine, and the Observance of the religious Rites and Ceremonies, which the *Jews* had received immediately from Heaven.

Note, That the compleat System of *Judaism* being contained in the Books of *Moses*, which are in every Body's Hands; I'll content myself with giving here a Description of the different Sects the antient *Jews* were divided into; and of their different Principles; and likewise of the different Sects of the modern *Jews*.

Judaism was antiently divided into several Sects; the principal whereof were the *Pharisees*, *Sadducees*, and *Essenians*.

The Sect of the *PHARISEES* (so called, say some, because separated from the rest by the Austerity of their Life, by their professing a greater Degree of Holiness, and more religious Observation of the Law) was formed in *Judea*, long before the Birth of *Jesus Christ*; and had for Authors *Sammai* and *Hillel*, according to *St. Jerom, in c. 8. Isaiah*, who speaks of it on the Report of the *Nazareans*, without having examined it.

The Austeries of the *Pharisees* are almost incredible. They fasted the second and fifth Day of the Week, and abstain'd from the Use of Wine, and of all that had Life. They used to put Thorns at the Bottom of their Gowns, that in walking they should prick their Legs. They laid on Boards two or three Feet broad, on which they put small Stones to hinder them from sleeping long. They wore very hard Belts or Girdles; and mutilated themselves to keep Continence.

It is true, that all these Mortifications were not practised, either by all, or always. They not only paid the Tenth, they were obliged to by the Law of God; but paid besides the Thirtieth, and Fiftieth of all their Fruits. They acquitted themselves exactly of all the Sacrifices commanded by the Law; and added to them several voluntary ones. Their Assiduity to Prayers was also marvellous; but their excessive Pride and Supineness, corrupted all those good Actions, for they had no other View than to gain thereby the Reputation of Saints, and render themselves Masters of the Minds of the People, who are always easier excited to Admiration and Respect, by an outward Appearance of Piety and Mortification, than by a solid Virtue.

In fact, they had acquir'd such an Authority, says *Josephus, lib. 17. de antiquit. c. 3.* that the last Kings of *Judea* were afraid to disoblige them, and were often

obliged to make Use of the Ministry of the *Pharisees* to maintain themselves. They always requir'd the first Place in the publick Feasts and Assemblies. It was offending them mortally, to refuse to hear them as infallible Masters. They had nothing else in their Mouths but the Law of God, which they had entirely corrupted by their Traditions; and made use of its Authority only to disguise their Ambition and Avarice, which were like the two Poles on which turn'd round all the Actions of their Life.

For their Doctrine, at least in the latter Days, it was mixed with strange Errors; they attributed all Things to Destiny, though they endeavour'd to reconcile it with the Freedom of the Actions of the human Will. They believed, with *Pythagoras*, the Transmigration of Souls; though they admitted it only for those of a religious Life. — In the judiciary Astrology they followed all the Dreams of the *Gentiles*. *St. Epiphanius* observes, that they had changed all *Greek* Terms of that Art into *Hebrew*.

The *SADDUCEES* boasted of being descended from *Sadoc*; but *St. Epiphanius* will have them to have taken their Rise from one *Dositheus*, a *Samaritan* Sectary; and *Tertullian* is of the same Opinion. *St. Jerom*, and other Authors add, that the *Sadducees* came near the *Samaritans* in many Things; particularly in this, that they allowed no Books of Scripture, but the five Books of *Moses*. *Father Serrarius*, a Jesuit, has also embraced this Opinion, as seeming to be supported by the Authority of *Josephus*. But *Josephus* says only this, that they admitted all that was written, *i. e.* all the Books of Scripture; intimating hereby, that they disowned the unwritten Traditions of the *Pharisees*. In effect, *St. Epiphanius* is forced to own, that the *Sadducees* were *Jews*, not *Samaritans*; inasmuch as they assisted at the Worship and Sacrifices of the Temple at *Jerusalem*; whereas the *Samaritans* sacrificed on Mount *Gerizim*.

The *Sadducees* denied the Existence of spiritual Substances, the Immortality of the Soul, and the Resurrection of the Bodies. They observed the Precepts of the Law to enjoy the temporal Advantages it promised; and to avoid the Punishments it ordered against the Transgressors. They rejected Fatality or Fate, granting to Free-Will an absolute Power to do Good. Their Number was but small; but their Quality made amends for it: For *Josephus* says, that the Persons the most remarkable, either for their Wit or their Rank, professed that Doctrine. There was be-
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tween them and the *Pharisees* an irreconcilable War. But if in their Dogma's the *Sadducees* were more impious than the *Pharisees*; at least they had not so much Pride, nor so much Hypocrisy in their Manners; and did not shew themselves so cruel Enemies of *Jesus Christ*.

The *ESSENIANS* are thought by some to have been among the *Jews*, what the most austere Monks are, or were, among *Christians*.

In effect, the *Essenians* seem to have been true *Pythagorean* Philosophers, in every Thing that related to their Manner of living. For they greatly affected Solitude and Retirement, and avoided all Conversation with Women, to devote themselves more entirely to the contemplative Life. *Pliny*, in his natural History, says of them, that living in a perfect Continence, and their Number but of those whom the Calamities of this Life obliged to embrace their Sect, formed an eternal Multitude.

Philo divided them into two Branches or Sects; the one who married, and the other who lived in Celibacy. *Josephus* seems likewise to have taken Notice of these two Sorts of *Essenians*; and also *Serrarius*, who has wrote very amply on the Subject. The first are those whom he calls *Præfici*, and who lived in Community: The second those called *Theoretici*, who lived in Solitude, and led a Life of pure Contemplation. He adds, that *Josephus* only makes mention of the first; passing untouched over the contemplative Kind, whom *Philo* calls *Therapeutæ*, and who were principally found in *Egypt*.

Grotius will have the *Essenians* the same with the ancient *Hafidim* or *Hafidei*, thus called, according to *Philo*, from their singular Piety, Humility, and Devotion. Among these, *Gale* observes, it was that the *Hebrew* Philosophy chiefly flourished.

Porphyry is very prolix in his Praises of the *Essenians*. He represents them as Despisers of Pleasure, Riches, Glory, and Delicacy, and strenuous Retainers to Continency, Austerity, Study, &c. He adds, they decline Marriage, and adapt and educate other People's Children in Religion, and Philosophy: They are all on a Level, hold every Thing in common, neither buy nor sell, &c. By long Habit they arrived at such a Degree of Patience, that *Porphyry* assures us, Flames and Tortures had not the least Effect on them. They scorned to intreat their Torturers; nor ever shed a Tear; but would smile under their Agonies, &c. As to their Learning, *Philo*, in his Treatise, that every good Man is free, tells us, that they despised Logick, as useless to the acquiring of Virtue: Physick they left to the Sophists and Disputers, as judging it to transcend the human Faculties; and applied themselves wholly to Morality.

Eusebius holds, that the *Esseni* called *Therapeutæ*, were real *Christians*, or *Jews* converted by *St. Mark*. In effect, *St. Jerom* says, that in the Time of that Apostle, the Faithful lived, as the Monks since have endeavour'd to live, in a perfect Community of Goods, which was the Cause that among them no Body could call himself neither poor nor rich.

But let it be how it will of these different Sentiments on the *Essenians*, what surprizes me most is, that before *Pliny*, the Authors who have spoke of those who professed excellent Morals, have said nothing at all of those *Essenians*, who should have been as much known then as the *Brachmans* and the *Gymnosophistes*, whom they mention. *Josephus* speaks of them but in the Reign of old *Herod*; and Cardinal *Baronius* is surprized that in the Gospel they are not mentioned with the *Pharisees*, *Sadducees*, and *Herodians*. I am of Opinion, that it may be easily answer'd, that this Sect of the *Essenians*, according to the Testimony of *St. Epiphanius*, was one of the four which had Course among the *Samaritans*, with whom the *Jews* had no Commerce; so that as no *Pharisees* were found in *Samaria*, it is not surprizing if there was no *Essenians* in *Jerusalem*.

Besides these three principal Sects, there were others in *Judea* of less Note; particularly that of the *SAMARITANS*, which was an ancient Sect among the *Jews*, still subsisting in some Part of the *Levant* under the same Name. Its Origin was in the Time of *Rehoboam*; under whose Reign a Division was made of the People of

Israel, into two distinct Kingdoms; one of these Kingdoms, called *Judea*, consisted of such as adhered to *Rehoboam*, and the House of *David*; the other retain'd the antient Name of *Israelites*, under the Command of *Jeroboam*. — The Capital of the State of those latter, was *Samaria*; and hence it was they were denominated *Samaritans*.

Salmanassar, King of *Assyria*, having conquer'd *Samaria*, led the whole People Captive into the remotest Parts of his Empire; and filled their Place with Colonies of *Babylonians*, *Cuthians*, and other Idolaters. These finding themselves daily destroy'd by wild Beasts, desir'd an *Israelitish* Priest to instruct them in the antient Laws and Customs of the Land they inhabited. This was granted them; and they thenceforth ceased to be incommoded by any Beasts. However, with the Law of *Moses* they still retain'd somewhat of their antient Idolatry. The Rabbins say, they adored the Figure of a Dove on Mount *Gerizim*.

The *Samaritans* did not sacrifice in the Temple of *Jerusalem*, and had no Communication with the *Jews* for the Ceremonies of the Law. They denied the Resurrection of the Dead, and of all the canonical Scriptures; received but the five Books of *Moses*. — They were divided into four Branches, *Essenians*, *Sabeans*, *Gorthienians*, and *Dositheans*; and had all something different, either for the Solemnity of their Feasts, or the Use of Meats. The last abstain'd from the Use of all Things animated for their Food; and observed so superstitiously the Sabbath, that they remained in the same Place and the same Posture where that Day surprized them, without moving till the next Day. They never married but once, and several kept Celibacy during their whole Life. *Dositheus* their Founder, having been refused among the *Jews* the Rank he pretended to, sided with the *Samaritans*, consider'd by them as Hereticks. But being unwilling yet to embrace their Sect, he invented a new one. To give it more Authority, he retired into a Cave, where, by an Abstinence too long continued, he kill'd himself in a Manner equally ridiculous and impious.

The *Sabeans* had changed the Time order'd by the Law of God, for the Celebration of the principal Solemnities of the Passover, of the Pentecost, and of the Tabernacles; for they celebrated the first at the Beginning of Autumn, the second towards the latter End of the same Season, and the last in the Month of *March*.

As for the modern *Samaritans*, some among the most learned of the *Jew* Doctors own; that they observe the Law of *Moses*, more rigidly than the *Jews* themselves. They have a *Hebrew* Copy of the Pentateuch, differing in some Respects from that of the *Jews*, and wrote in different Characters, commonly called *Samaritan Characters*; which *Origen*, *St. Jerom*, and other Fathers and Criticks, antient and modern, take to be the primitive Character of the antient *Hebrews*; tho' others maintain the contrary. The Point of Preference, as to Purity, Antiquity, &c. of the two Pentateuchs, is also disputed by the modern Criticks.

The *Samaritans* are now few in Number; tho' it is not very long, since they pretended to have Priests; descended directly from *Abraham*. They were chiefly found at *Gaza*, *Neapolis* (the antient *Sichem*) *Danidscus*, *Cairo*, &c. They had a Temple or Chapel on Mount *Gerizim*, where they performed their Sacrifices.

Joseph Scaliger being curious to know their Usage, wrote to the *Samaritans* of *Egypt*, and to the High Priest of the whole Sect, who resided at *Neapolis*. They returned two Answers to *Scaliger*, dated in the Year 998, of the Hegira of *Mahomet*. These Answers never came to the Hands of *Scaliger*. They are now in the King of *France's* Library, and have been translated into *Latin* by Father *Morin*, Priest of the Oratory; and printed in the Collection of Letters of that Father in *England*, 1682, under the Title of *Antiquitates Ecclesie Orientalis*.

In the first of these Answers, wrote in the Name of the Assembly of *Israel* in *Egypt*, they declare that they celebrate the Passover every Year, on the fourteenth Day of the first Month, on Mount *Gerizim*; and that he who then

then did the Office of High Priest, was called *Eleazar*, a Descendant of *Phineas*, Son of *Aaron*. — At present they have no High Priest.

In the second Answer, which is in the Name of the High Priest *Eleazar*, and the Synagogue of *Sichem*, they declare that they keep the Sabbath in all the Rigour wherewith it is enjoined in the Book of *Exodus*; none of them stirring out of Doors, but to the Synagogue. They add, that on that Night they do not lie with their Wives; that they begin the Feast of the Passover with the Sacrifice appointed for that Purpose in *Exodus*; that they sacrifice no where else but on Mount *Gerizim*; that they observe the Feasts of Harvest, the Expiation, the Tabernacles, &c. They add further, that they never defer Circumcision beyond the eighth Day; never marry their Nieces, as the *Jews* do; have but one Wife; and in fine do nothing but what is commanded in the Law: Whereas the *Jews* frequently abandon the Law to follow the Inventions of their Rabbins.

At the Time when they wrote to *Scaliger*, they reckon'd 122 High Priests; affirm'd that the *Jews* had no High Priests of the Race of *Phineas*; and that the *Jews* belied them in calling them *Cutbeans*, whereof they are descended from the Tribe of *Joseph* by *Ephraim*.

The Truth is, the *Jews* impose Abundance of Things on the *Samaritans*. They frequently confound them with the *Sadducees*, as if they were infected with their Errors. Rabbi *Benjamin*, who lived in the 12th Century, confirms the best Part of what we have said of the *Samaritans*: He observes, they had Priests of the Tribe of *Aaron*, and who never married with any but those of the same Tribe: That they sacrificed on Mount *Gerizim*, where they had an Altar of Stones, raised by the *Israelites* after passing over *Jordan*. He adds, that they are of the Tribe of *Ephraim*; that they change their Habit to go to the Synagogue, and wash e'er they put it on.

The *NAZAREANS* made also a Sect a-part, and were different from the other *Jews* either for the Sacrifices, or for the canonical Books, or for the Use of Meats, abstaining from all Animals, as reputed them unclean.

The *Herodians* bore that Name, because, according to some, they said that the old *Herod* was the *Messiah* promised by the Prophets, because the Scepter had failed in the House of *Judah*, when he came to the Crown. For my Part, I am rather of Opinion, that they were Persons entirely in *Herod's* Interest, and his Partisans, who with him defended the Tributes, imposed upon the *Jews* by the *Romans*, against the *Galileans*, who maintained that it was not agreeable to the Law of *Moses* to pay them.

The *HEMEROBAPTISTS* were *Jew* Sectaries, who baptized themselves every Day, and at all Seasons of the Year; making Holiness consist in daily Ablutions. They followed the Opinions of the *Pharisees*, except that with the *Sadducees* they denied the Resurrection of the Dead. Mention is made of them in the Gospel of *St. Mark*, though they are not named. It is they who reproach our Lord, that his Disciples did not wash their Hands, before they took their Repast. Which was the Cause that he reproached them that they were religious Observers of that Sort of Superstition, and neglected God's Commandments.

At present there are but two Sects among the *Jews*, viz. the *Caraites* and the *Rabbinists*.

The *CARAITES*, is a Sect among the *Jews*, who admit of no Rules of Religion, but the Law written by *Moses*, exclusive of all Allegories, Traditions, and the like.

Leo of *Modena*, a Rabbini of *Venice*, observes, that of all the Heresies among that People, before the Destruction of the Temple, there is now none left but that of *Caraim*, a Name derived from *Micra*, which signifies the pure Text of the Bible; because of their keeping to the Pentateuch, observing it to the Letter, and rejecting all Interpretations, Paraphrases, and Constitutions of the Rabbins.

Aben Ezra, and some other Rabbins, treat the *Caraites* as *Sadducees*, but *Leo de Juda* calls them more accurately *Sadducees Reform'd*; in Regard they believe the Immortality of the Soul, Paradise, Hell, Resurrection,

which the antient *Sadducees* denied. He adds, however, that they were doubtless originally real *Sadducees*, and sprung from among them.

M. Simon, with more Probability, supposes them to have risen hence, that the more knowing among the *Jews* opposing the Dreams and Reveries of the Rabbins, and using the pure Text of the Scripture to refute their groundless Traditions, they had the Name *Caraim* given them; which signifies as much as the barbarous Latin *Scriptuarii*, i. e. People attached to the Text of the Scripture. The other *Jews* give them the odious Name *Sadducees*, from their Agreement with those Sectaries on the Head of Traditions.

Scaliger, *Vossius*, and *Spanheim*, rank the *Caraites* among the *Sabeans*, *Magi*, *Manichees*, and *Mussulmen*, but by Mistake: *Wolfgang*, *Fabricius*, &c. say, the *Sadducees* and *Esseni* were called *Caraites*, in Opposition to the *Pharisees*: Others take them for the Doctors of the Law, so often mention'd in the Gospel; but these are all Conjectures. *Josephus* and *Philo* make no Mention of them; which shews them to be more modern than any of those Authors. In all Probability this Sect was not form'd, till after the Collection of the second Part of the *Talmud*, or the *Gemara*; perhaps not till the compiling the *Mishna* in the third Century. — The *Caraites* themselves pretend to be the Remainder of the ten Tribes led Captive by *Salmanassar*.

Wolffius, from the *Memoirs of Mardocheus*, a *Carait*, refers their Origin to a Massacre among the *Jewish* Doctors, under *Alexander Jannæus* their King, about one hundred Years before Christ: For *Simeon*, Son of *Schetch*, and the Queen's Brother, making his Escape into *Egypt*, there forged his pretended Traditions; and at his Return to *Jerusalem*, published his Visions; interpolating the Law after his own Fancy, and supporting his Novelties on the Notices which God he said had communicated by the Mouth of *Moses*, whose Depositary he was: He gained many Followers; and was opposed by others, who maintain'd, that all which God had reveal'd to *Moses* was written. Hence the *Jews* became divided into two Sects, the *Caraites* and the *Traditionaries*: Among the first, *Juda*, Son of *Tabbai*, distinguished himself; among the latter, *Hillel*. *Wolffius* reckons not only the *Sadducees*, but also the Scribes, in the Number of *Caraites*. But the Address of the *Pharisees* prevailed against them all; and the Number of *Caraites* decreased: *Anan* indeed, in the eighth Century, retrieved their Credit a little, and Rabbi *Schalmon* in the ninth. Matters went pretty well with them till the fourteenth, but since that Time they have been on the declining Hand.

The *Caraites* are but little known; their Works coming only into very few Hands, even among the greatest *Hebraists*. *Buxtorf* never saw more than one; *Selden* two; Mr. *Trigland* says, he has recovered enough to speak of them with Assurance; he asserts, that soon after the Prophets had ceased, the *Jews* became divided on the Subject of Works and Superrerogation; some maintaining their Necessity from Tradition; whilst others keeping close to the written Law, set them aside; and it was from these last, that *Caraitism* commenced. He adds, that after the Return from the *Babylonish* Captivity, the Observation of the Law being to be re-established, there were several Practices found proper for that End; and these once introduced, were looked upon as essential, and appointed by *Moses*; which was the Origin of *Pharisaism*; as a contrary Party, continuing to keep close to the Letter, founded *Caraitism*.

The modern *Caraites*, *Leo* of *Modena* observes, have their Synagogues and Ceremonies; pretending to be the sole proper *Jews*, or Observers of the Law of *Moses*; calling the rest by the Term *Rabbanim*, or Followers of Rabbins. These hate the *Caraites* mortally, refusing to ally, or even converse with them, and treating them as *Mamzerim* or Bastards; because of their rejecting the Constitutions of the Rabbins, relating to Marriage, Repudiations, Purifications of Women, &c. This Aversion is so great, that if a *Carait* would become a Rabbini, he should never be received by the other *Jews*.

The *Caraites* however do not absolutely reject all Kind of Traditions, but only such as do not appear well grounded. *Selden*, who is very express on this Point, in his *Uxor Hebraica*, observes, that besides the mere Text, they have certain Interpretations which they call *Hereditary*, and which are proper Traditions. Their Theology seems to differ from that of the other *Jews*, in that it is purer and clearer of Superstition: They give no Credit to the Explications of the *Cabbalists*, chimerical Allegories, nor to any Constitutions of the *Talmud*, but what are conformable to the Scripture, and may be drawn from it by just and necessary Consequences: Of these we shall give three notable Instances.

The first relating to the *Mezouzot*, or Parchments, which the *Jews* tie at all the Gates thro' which they use to pass. The second regarding the *Thephillin*, or Philacteries, mention'd in the New Testament; and the third the Prohibition of eating Milk, with Flesh. The two first the *Jews* pretend are formally ordain'd in *Deuteronomy*, where it is said, *Thou shalt bind them as a Sign on thy Hands, and they shall serve thee as Frontlets (Head-stalls) between thy Eyes; thou shalt write them on the Posts of thy House.* The *Caraites* *Aaron*, in his Comment on these Words, maintains, that they are not to be taken literally, as the Rabbins do, but figuratively; as intimating, that the *Jews*, whether entering or going out, should be always mindful of them. For the *Thephillin*, the *Caraites* rally the Rabbins on their praying with their Philacteries, or Tongues of Leather fasten'd to their Forehead, comparing them to bridled Asses. This Passage the *Caraites* interpret figuratively; and in their Interpretation agree with *St. Jerom*, who takes Notice of the Delusion of the *Parisees*, *In writing the Decalogue on Parchment, rolling it up, and tying it to their Forehead with Thongs, to have it always before their Eyes.* For the third Point, the Rabbins say it is commanded in that Text, *Thou shalt not see the Kid in his Mother's Milk*; but the *Caraites* get clear of it by explaining this Passage by another, *Thou shalt not kill the Mother when with Young*; which is natural. Nor have the *Jews* any Thing to object against this Interpretation, but its being that of their Doctors. Thus the *Caraites* exempt themselves from an infinite Number of Ceremonies and Superstitions, which the Rabbins have established among the *Jews*.

Yet in many Things they retain all the Superstitions of the Rabbins. *Shupart*, in his Treatise *De Secta Caraitorum*, treating of their Dogma's, observes, that they are in all Respects as precise and ceremonious as the most rigid Traditionary, in what relates to the Observation of the Sabbath, Passover, Feast of Attonement, of Tabernacles, &c. That they observe Prayers and Fastings; and wear the *Zitzit*, or Pieces of Fringe, on the Corners of their Garments. They hold that all Sin is effaced by Repentance; in which they differ from the Rabbins, who hold that some are only effaced by Death. As for Circumcisions, they do not believe it necessary, with the Traditionaries, that there be Blood shed; add that when a Child dies before he be eight Days old, the Rabbins circumcise him after he is dead, that he may not appear uncircumcised at the Resurrection; whereas the *Caraites*, when they perceive the Child in Danger, chuse rather to circumcise him ere the eighth Day. In Matter of Divorce the *Caraites* agree with the other *Jews*; and observe the same Rules and Restrictions in the killing and dressing of Beasts; but differ from them in the Kind of legal Impurities and Pollutions.

Potiger observes of the *Caraites* in *Lithuania*; that they are very different, both in Aspect, Language, and Manners, from the Rabbins, wherewith their Country abounds. Their Mother Tongue is the *Turkish*; and thus they use in their Schools and Synagogues. In Visage they resemble the *Mahometan Tartars*. Their Synagogues are placed North and South; and the Reason they give for it is, that *Salmanassar* brought them Northward. So that in praying, to look to *Jerusalem*, they must turn to the South. He adds, that they admit all the Books of the Old Testament; contrary to the Opinion of many of the Learned, who hold, that they reject all but the Pentateuch.

Caleb, a *Caraites*, reduces all the Differences between

them and the Rabbins to three Points. 1. In that they deny the oral Law to come from *Moses*, and reject the *Cabbala*. 2. In that they abhor the *Talmud*. 3. In that they observe the Feasts, as the Sabbaths, &c. much more rigorously than the Rabbins do. To this may be added, that they extend the Degrees of Affinity, where-in Marriage is prohibited, almost to Infinity.

There are still some *Caraites* subsisting in *Poland*, *Russia*, *Constantinople*, and other Places of the *Levant*.

The Rabbins, who beside the Text of the Scripture, received the Traditions of the Antients and follow the *Talmud*.

Note, That the *Talmud* is a Compilation of Expositions of the Duties imposed on the *Jews*, either in Scripture or by Tradition, or by Authority of their Doctors, or by Custom, or even by Superstition; to speak more plainly still, it is the Course of Cases of Conscience, or of moral Theology, wherein the Duties are explained, and the Doubts cleared, not by Reasoning, but generally by Authority, by the Custom of the Nation, and by the Decisions of the most approved of the antient Doctors.

The *Talmud* consists of two general Parts: The one called *Mischna*, and the other *Gemara*. — The *Mischna* contains the Text; and the *Gemara* contains the Commentaries; so that the *Gemara* is, as it were, a Glossary on the *Mischna*; which *Mischna* consists of various Traditions of the *Jews*, and of Explanations of several Passages of Scripture. The *Jews* maintain, that it was compleated, and reduced into a Body, by *Rabbi Juda*, in the second Century, to prevent the Memory of their Traditions from perishing. But the Generality of the Learned, scarce allow it of such Antiquity; and bring it several Centuries lower.

The *Gemara* (of the *Chaldee* גמרא *Gemar*, or *Ghemar*, to finish, perfect, or compleat any Thing) is usually called simply *Talmud*. In this Sense we say there are two *Gemara's* or *Talmuds*; that of *Jerusalem*, and that of *Babylon*; though in Strictness, the *Gemara*, as we have already observed, is only an Explication of the *Mischna*, given by the *Jewish* Doctors in their Schools; much as the Commentaries of our School Divines on *St. Thomas*, or the Master of the Sentences, are an Explication of the Writings of those Authors.

A Commentary, *M. Tillmont* observes, was wrote on the *Mischna*, by one *Jochanan*, whom the *Jews* place about the End of the second Century: But *Father Morin* proves from the Work itself, wherein Mention is made of the *Turks*, that it was not wrote till the Time of *Heraclius*, about the Year 620: And this is what is called the *Gemara*, or *Talmud* of *Jerusalem*, which the *Jews* do not use or esteem much, by Reason of its Obscurity. They set a much greater Value on the *Gemara* or *Talmud* of *Babylon*, began by one *Asa*; discontinued for 73 Years, on Occasion of the Wars with the *Saracens* and *Persians*, and finished by one *Josa*, about the Close of the seventh Century.

Though the Name *Talmud*, in its Latitude, includes both the *Mischna* and the two *Gemara's*; yet is it properly that of *Asa* and *Josa* alone, which is meant under that Name. — This the *Jews* prize above all their other Writings, and even set it on a Level with Scripture itself. In effect they conceive it as the Word of God, derived by Tradition from *Moses* and preserved without Interruption to their Time. — *Rabbi Jehuda*, and afterwards *R. Jochanan*, *R. Asa*, and *R. Josa*, fearing the Traditions should be lost in the Dispersion of the *Jews*, collected them into the *Mischna* and *Gemara*. We find the *Gemara* stuffed with Dreams and Chimera's; a deal of Ignorance, and a World of impertinent Questions and Disputations; the Style very coarse.

Rabbi Moses, Son of *Maimon*, has made an Abridgment of the *Talmud*, which *Scaliger* prefers to the *Talmud* itself; as being purged of many of the Fables wherewith the other is full. It is a System of the Laws and Customs of the *Jews*, both their civil and the common Law, and the best of their Traditions.

About the Year 1236, a *Jew* of *Rochel* in *France*, well versed in the *Hebrew*, becoming a Christian, made

made a Journey to Pope Gregory IX. and discovered to him a Number of Errors in the *Talmud*: These the Pope sends in 39 Articles to the Archbishops of France, with a Letter appointing them to seize the Books of the Jews; and to burn all such as should contain those Errors, in Consequence of which Order, about twenty Cart-loads of those *Hebrew* Books were burnt. He wrote to the same Effect to the Kings of France, England, Arragon, Castile, &c. His Successor Innocent IV. giving Commission to his Legate Eudes de Chateauroux to examine the *Talmud*, and other Jewish Books more carefully, and to tolerate such Errors as were not contrary to the Christian Religion; the Legate wrote to the Pope, that to tolerate them was to approve them; and the 15th of May, 1248, he condemned them juridically to the Flames.

The *Rabbinists* are divided into two other Sects, viz. pure *Rabbinists*, who explain the Scripture in its natural Sense by Grammar, History, and Tradition; and *Cabbalists*, who to discover hidden mystical Senses, which they suppose God to have couched therein, make use of the *Cabbala*.

Note, That the *Cabbala*, *Cabala*, *Kabbala*, *Kabala*, *Cabalistica*, &c. (in *Hebrew* קבלה *Kabbalach*, from the Verb קבל *Kibel*, to receive by Tradition, or from Father to Son) is a mysterious Kind of Science, delivered by Revelation to the ancient Jews, and transmitted by oral Tradition to our Times; serving for Interpretation of the Books both of Nature and Scripture.

Cabbala then primarily denotes any Sentiment, Opinion, Usage, or Explication of the Scripture transmitted from Father to Son; in which Sense the Word *Cabbala* is not only applied to the whole Art, but also to each Operation performed according to the Rules of that Art. Thus it is, *Rabbin Jac. Ben Ascher*, surnamed *Baal Hatturim*, is said to have compiled most of the *Cabbala*'s invented on the Books of *Moses* before his Time.

As to the Origin of the *Cabbala*, the Jews believe, that God gave to *Moses* on Mount *Sinai*, not only the Law, but also the Explication of that Law; and that *Moses* after his coming down, retiring to his Tent, rehearsed to *Aaron* both the one and the other. When he had done, *Aaron* standing on the Right-Hand, his Sons *Eleazer* and *Ithamar*, were introduced to a second Rehearsal: This over, the 70 Elders that composed the Sanhedrim were admitted; and lastly, the People, as many as pleased: To all which *Moses* again repeated both the Law and Explication, as he received them from God. So that *Aaron* heard it four Times, his Sons thrice, the Elders twice, and the People once. Now of the two Things which *Moses* taught them, the Law and the Explanation, only the first was committed to Writing, which is what we have in *Exodus*, *Leviticus*, and *Numbers*; as to the second, or the Explication of those Laws, they were contented to impress it well in their Memory to teach it their Children, they to theirs, &c. Hence the first Part they call simply the Law, or the written Law; the second, the oral Law or *Cabbala*.

Some Rabbins however, pretend their Fathers received the *Cabbala* from the Prophets, who received it from the Angels. *Rabbi Abr. Ben Dior* says expressly, that the Angel *Raziel* was *Adam*'s Master, and taught him the *Cabbala*, that *Japhiel* was *Shem*'s Master; *Tsedekiel*, *Abraham*'s; *Raphael*, *Isaac*'s; *Pelial*, *Jacob*'s; *Gabriel*, *Joseph*'s; *Meratron*, *Moses*'s; *Malatbiel*, *Elias*'s, &c.

Among these Explications of the Law, which in Reality are little else but the several Interpretations and Decisions of the Rabbins on the Law of *Moses*: Some are mystical, consisting of odd abstruse Significations given to a Word, or even to the Letters whereof it is composed: Whence by different Combinations, they draw Meanings from Scripture very different from those it seems naturally to import. The Art of interpreting Scripture after this Manner, is called more particularly *Cabbala*; and 'tis in this last Sense the Word is more ordinarily used among us.

This *Cabbala*, called also *artificial Cabbala* (to distinguish it from the first Kind, or simple Tradition)

is divided into three Sorts, viz. *Gematria*, *Notaricon*, and *Themurab*.

GEMATRIA, is a geometrical or arithmetical Method of explaining Words, whereof there are two Kinds: The first bearing a more immediate Relation to Arithmetick; and the latter to Geometry.

The first consists in taking the numerical Value of each Letter in a Word or Phrase; and giving it the Sense of some other Word, whose numerical Letters, taken in the same Manner, make the same Sum. For it is to be observed that neither the *Hebrews* nor *Greeks* have any other numerical Figures, besides the Letters of the Alphabet.

Thus a *Cabbalist* taking the two first Words in *Genesis*, בראשית ברא, and by Addition getting the Sum total of all the Numbers, signified by those Letters, find that these two Words signify the same as those other three, תשנה נבדא: בראש as to the first; ב, 2; ר, 200; א, 1; ש, 300; י, 10; ת, 400; ב, 2; ר, 200; and א, 1; which together make 1116. And as to the latter, ב, signifies 2; ר, 200; א, 1; ש, 300; ה, 5; ג, 50; ש, 300; ה, 5; ג, 50; ב, 2; ר, 200; and א, 1: which summed up, yield the same Number 1116.

Whence the *Cabbalists* conclude, בראשית ברא, in the Beginning he created: signifies the same Thing as תשנה נבדא בראש, it was created at the Beginning of the Year; and accordingly the received Opinion of the *Cabbalists*, is, that the World was created at the Beginning of the Month *Thifri*, which was antiently the first Month in the Year; and answers to our first Month in Autumn, viz. *September*.

So again in the Prophecy of *Jacob*, *Gen. xlix. 10.* the Words יבא שורא are understood of the *Messiah*; by Reason they make the same Number with יבאש, which signifies the *Messiah*.

The second Kind of *Gematria* is much more obscure and difficult, and accordingly less used; it is employed in seeking for abstruse and hidden Interpretations in the Dimensions and Parts of the Buildings mentioned in Scripture, by dividing, multiplying, &c. those Measures by each other. Of this we shall give an Example from some Christian *Cabbalists*.

The Scripture says, that *Noah*'s Ark was 300 Cubits long, 50 wide, and 30 high: Now the *Cabbalist* takes the Length for the Basis of his Operations; 300 in the *Hebrew* is expressed by the Letter ש; which Length divided by the Height 30, gives the Quotient 10, the *Hebrew* Character whereof is י, to be placed on the right Side of ש. He then divides the same Length by the Width 50; the Quotient whereof 6, is expressed by a ו; which being placed on the left Side of ש makes, together with the other two Letters, the Name *Jesus* ישך. Thus by the Rules of the *Cabbala* it appears that there is no Salvation, but in *Jesus Christ*; as at the Deluge no Person was saved but those in the Ark.

After the same Manner is the same Name ישך, in the Dimensions of *Solomon*'s Temple. But it is rather an Injury than an Advantage to the Christian Religion, to support it by such frivolous Evidences.

NOTARICON, according to *Rabbi Nathan*, in his great *Aruch*, is when a single Letter is taken for Sign of a Thing, i. e. for a whole Name. He adds, that the Word comes from the Latin *Notarius*, a Person who writes in Notes, or Short-hand. And *R. Elias Levita* gives the same Account in his *Theshbits*, except that in lieu of one Letter for a Word, he mentions two or three.

But after all neither the one nor the other seems alone sufficient; for as a single Letter frequently makes a Word, so in the *Notaricon*, a whole Word sometimes stands for a single Letter.

There are therefore two principal Kinds of *Notaricon*; the first is, when by Apharexis or Apocope, the first or last Letters of several Words are joined to make a single Word or Phrase; which therefore is of two Kinds, the one initial, the other final; and each is done several Ways, viz. either by taking the Letters the common Way, or backwards; though there is also a third Kind made, as the Rabbins call it, by Leaps, i. e. by skipping over some Letters.

first of these Kinds, which the Rabbins call *Rasche Theboth*, appears very antient; and is supposed by some, well versed in the *Hebrew*, to have taken its Origin from the *Psalms*, and other Places of the Scripture, proceeding alphabetically, *i. e.* the first Verse beginning with א, the first Letter of the Alphabet; the second with ב, the second Letter, &c.

The second Kind is also very common, and called *Sophe Theboth*, *i. e.* the End of Words. For Instance, by telling the last Letters of the Words, מה שמן כוהן, *mibi quodnam nomen est, quodnam?* they find the Name of God, *Jehovah*. This becomes still more puerile, when they take the Letters backwards.

The third Kind is more modern, more gross, and perplexed: Here a Letter gives a whole Word, instead of a Word only giving a Letter; so that a Word shall furnish a whole Phrase. Thus for an Example is the first Word of *Genesis*, בראשית, *Bereschit*, is found, he created the Heaven and the Earth, the Sea, the Abyss, &c.

The fourth Kind of *Cabbala*, called *THEMURAH*, *q. d.* changing, consists in changing, and transposing the Letters of a Word; which is done various Ways.

1. By separating them, and thus, *v. g.* from *Bereschit*, *i. e. in principio*, they make בראשית, *i. e. posuit fundamentum*; just as in playing with Words, we sometimes separate *sum-mus, ter-minus, sus-tinea-mus*.
2. By transposing the Letters, and ranging them in a different Manner; thus from the same Word *Bereschit*, they make *a-betifery*, the first of *Tizri*; and because this is taken from the first Word in the History of the Creation of the World, they thence conclude, the World was created on the first Day of the Month *Tizri*.
3. By taking one Letter for another, with Respect to the different Relations they acquire in considering the Alphabet different Ways: Thus dividing the *Hebrew* Alphabet of twenty-two Letters into two Parts, and taking the first of either of these Moieties for the first of the other, the second for the second, &c. By this Means of *Tabcal*, an unknown Name mention'd in *Isaiah*, they form *Remla*, the Name of a King of *Israel*. Another Manner of changing the Letters is, by taking the Alphabet two Ways, first in the common Way, then backwards; and changing mutually the two first Letters, then the two second, &c. By this Means of לבקמי, *the Hearts of those who rise against me*, they make נשקמי, *the Chaldeans*; and thence conclude, that those God here speaks of are *Chaldeans*. These two last Kinds are also called אקרון, Association, Combination.

The *Cabbala*, hitherto spoke of, may be called *speculative Cabbala*, in Opposition to the following, which may be called *practical Cabbala*; and which is applied to the Use, or rather Abuse, which Visionaries and Enthusiasts make of the Text of the Scripture, for discovering Futurity, by the Study and Consideration of the Combination of certain Words, Letters, and Numbers in the sacred Writings. All the Words, Terms, magick Figures, Numbers, Letters, Charms, &c. used in the *Jewish* Magick, as also in the hermetical Science, are comprized under this Species of *Cabbala*. But 'tis only the Christians that call it by this Name, on Account of the Resemblance this Art bears to the Explications of the *Jewish Cabbala*; for the *Jews* never use the Word *Cabbala* in any such Sense, but ever with the utmost Respect and Veneration.

There are Visionaries among the *Jews*, who believe, that *Jesus Christ* wrought his Miracles by Virtue of the

Mysteries of the *Cabbala*. Some learned Men are of Opinion, that *Pythagoras* and *Plato* learn'd the *Cabbalistical Art* of the *Jews* in *Egypt*; and fancy they see evident Foot-steps thereof in their Philosophy: Others, on the contrary, say it was the Philosophy of *Pythagoras* and *Plato*, that first furnished the *Jews* with the *Cabbala*. Be this as it will, it is certain, that in the first Ages of the Church, most of the Hereticks gave into the vain Notions of the *Cabbala*; particularly the *Gnosticks*, *Valentinians*, and *Basiliidians*. Hence arose the *ABPAΞΑΣΑΣ*, and the Multitude of Talismans wherewith the Cabinets of the Virtuosi's are stock'd.

It has been observed that *Judaism*, of all other Religions, is that which is the most rarely abjured. In the 18th of *Edward I.* the Parliament granted a fifteenth for the Expulsion of *Judaism*.

In *England*, formerly, the *Jews* and all their Goods belonged to the chief Lord where they lived, and he had such absolute Property over them, that he might sell them; for they had not Liberty to remove to another Lord without Leave. *Matt. Paris* tells us, that *Henry III.* sold the *Jews* to *Earl Richard* his Brother, for a Term of Years, that *Quos Rex excoriaverat comes evisceraret*, *i. e.* that those the King had only excoriated or fleeced, should be unbowelled by the Earl.

They were distinguished from the Christians both living and dying, for they had proper Judges and Courts wherein their Causes were tried, and they wore a Badge on their Breast over their Cloaths, in Shape of a Table, and were fined if they stirr'd abroad without it. They were never buried in the Country, but brought up to *London*, and interr'd without the Walls. At present the *Jews* in *England* have no other Badges to distinguish them from the Christians than their immense Riches. They enjoy all the Privileges of a Christian Subject, few excepted, only for Form Sake, and which are of little or no Signification. It is true, that they behave with a great deal of Decency, Circumspection, and are very good Subjects; encouraging Commerce, in which most of them are well vers'd.

They have two Synagogues in *London*, one for the *Portuguese*, *Italians*, &c. and the other for the *Dutch Jews*. That of the *Portuguese* is the finest; and their Ceremonies perform'd with a greater Decency.

There are but very few *Jews* in *France*, considering the vast Extent of the Kingdom. They have no Synagogue at *Paris*, and no where else in *France* but at *Metz*.

They enjoy several very great Privileges in the States of the Great Duke of *Tuscany*; and have a very rich Synagogue at *Leghorn*, where, in my Opinion, their divine Service and Ceremonies are performed with more Decency, and a greater Appearance of Piety, than in any other Synagogue I have seen. They told me, that it had been honoured with the Presence of one of the late Kings of *Denmark*, and shewed me a Bible he had kissed through Respect. They have no other Marks of Distinction throughout *Italy*, but a Piece of yellow Tape, which they wear at their Button-Hole, except in the Pope's Dominions, where they wear a yellow Hat. At *Avignon*, where I was 1727, they entertained us once after the Service was over, with a Kind of *Mottet*, or Anthem in Musick, which was prettily executed. For my Part, all those I have conversed with on my Travels, have always behaved with a great deal of good Manners, and Complaisance; and have dealt with me, with all the Honesty and Justice, I could have expected from a Man of the greatest Probity among us Christians.

K E B E R.

KEBER (for כפר; *capbar*, which in the *Chaldee*, *Syriack*, and *Arabick*, signifies to deny) is the Name of a Sect among the *Persians*, who for the Generality are rich Merchants. Though they inhabit the Middle of *Persia*, and are found in great Number in the Suburbs of *Ispahan*, yet it is not known whether or no

they are originally *Persians*, as having nothing in common with the other *Persians*, but the Language. They are distinguished by their Beard, which they wear very long, and by their Dress, which is quite different from the rest.

They are, in effect, Heathens, but are in great Reputation

tation for the Regularity of their Lives. Some Authors say they adore Fire, in Imitation of the antient *Persians*; but this is contradicted by others: They believe the Immortality of the Soul, and have something like what the Antients taught of Hell, and the Elysian Fields.

When any of them die, they let loose a Cock in his House, and drive it out into a Field; if a Fox seizes it and bears it off, they make no doubt but the Soul of the Defunct is saved. If this first Experiment does not satisfy them, they have Recourse to a second which is conclusive; they carry the Carcase into the Burying-Ground and prop it against the Wall with a Fork: If the Birds peck out the right Eye, they look on him as one of the Predestinated, and bury him with a great deal of Ceremony, letting him down gently into the Grave; but if the Birds begin with the left Eye, they conclude him a Reprobate, and throw him headlong into a Ditch.

There is another religious Sect in *Persia*, called the *Gebres*, different from the *Keber*, who appeared to have been *Persians* converted to Christianity, and who being afterwards left to themselves, mingled their antient Superstitions with the Truths and Practices of Christianity; and so formed themselves a Religion apart.

The *Gebres* or *Gabres*, pretend they derive their Religion from one *Azer*, a Frank by Nation, and by Profession a Sculptor: This Man coming to *Babylon*, where he then dwelt, married a Maid of the Country, called *Dogdon*; who, after a Visit which she received from the Angel, was filled with a divine Light, and soon afterwards found herself with Child. The Astrologers at the same Time perceiving that the Child would be a great Prophet, and the Founder of a new Religion; *Neabrou* the Prince then reigning, was advised hereof; who gave immediate Orders for all the Women with Child to be put to Death, throughout the Empire. The Order was executed immediately; but the Mother of the future Prophet shewing no Token of Pregnancy, escaped; and was at length happily delivered of a Son called *Ebrahim Zer Ataubt*.

After his Birth new Dangers arose; the King being informed thereof, had him brought before him, and

drawing his Sabre would have slain him with his own Hand, but his Arm grew motionless upon the Spot. Upon this a huge Fire was lighted, and the Child cast into the same; but he rested therein as on a Bed of Roses. He was afterwards delivered from other Kinds of Death by a Sort of Flies which infested the Kingdom: one whereof entering the King's Ear rendered him frantic, and at length killed him.

Cha-Gloches his Successor, made the like Attempts on the Child, but was so struck with the Miracles which he saw him work, that he began to adore him, as all the rest of the People already did.

At length, after a great Number of Miracles, the Prophet disappeared. Some held he was translated into Heaven, Body and Soul: Others, that he found an Iron Coffin near *Bagdat*, where shutting himself up, he was carried away by the Angels.

After he was in Possession of Paradise, God sent them, through his Means, seven Books; which contained all the Matters of Religion; and afterwards seven more of the Explanation of Dreams; and lastly, seven of Medicine. *Alexander the Great* burnt the first seven, by reason no Body understood the Language, and kept the other fourteen for his own Use.

After his Death, some of the Priests and Doctors among the *Gabres* retrieved as much as their Memory would allow them of the lost Books; and composed a large Volume still extant among the modern *Gabres*; tho' they understand nothing either of the Words or the Character.

Throughout the whole, we may discern the Marks and Traces of Christianity, though grievously defaced: The Annunciation, the Magi, the Massacre of the Infants, our Saviour's Miracles, &c. This Sect is dispersed throughout the whole Empire of *Persia*.

Note, That the *Turks* call the Christians *Gabres*, q. d. Infidels or Heathens, or Gentiles: The Word *Gabre* among the *Turks* having the same Signification as Pagan or Infidel among the Christians; and denoting any Thing not Mahometan..

L A P I D A R Y.

LAPIDARY, is an Artificer, who cuts precious Stones.

There are various Machines used in the cutting of precious Stones, according to the Quality of the Matter to be cut.

To cut and form a *Diamond*, which is extremely hard, and for that Reason esteemed the most valuable of all precious Stones, the *Lapidaries* use a Wheel of soft Steel, turned by a Kind of Mill, with Diamond Dust, tempered in Oil of Olives; which serves likewise to polish it.

From the different Manner of cutting them, *Diamonds* borrow their different Appellations of *Roses*, *Brilliant*s, *Table*, &c.

To give to a *Diamond* the Form of a *Rosa*, it must be made quite flat underneath, and its upper Part cut into divers little Faces, usually Triangles, the uppermost whereof must terminate in a Point.

A *Brilliant Diamond* is formed by cutting it in Faces both a-top and bottom, making its *Table*, or principal Face a-top, flat.

The *Table Diamond* is that which has a large square Face a-top.

The *Diamond* being a very hard Stone, the Process in cutting it is longer than that of any other precious Stone. The whole Secret of the Art consists in observing a just Symmetry in the Formation of the Faces, whereby the Lustre of the Stone is more or less heightened; for if they are too large, that Lustre is dull or languishing, and if too small, it is too confuse, and the Stone does not play, by so agreeable a Variety of Colours. It consists likewise in the Polishing, that there should be neither Clouds, Flaws, nor Scratches on the Stone. The Artist

is not absolutely obliged to wait assiduously on his Work especially in the cutting of the Stone; for when he has fixed it he may leave it if he pleases, to turn on the Wheel, if his Affairs calls him somewhere else, provided he be there at a due Time to change Sides, and to supply the Wheel with new Diamond-Dust.

Oriental *Rubies*, *Sapphires*, and *Topazes* are cut, and formed on a Copper Wheel with Oil of Olive, and Diamond-Dust: They are polished on another Copper Wheel with Tripoly and Water.

Emeralds, *Ilyacinths*, *Amethysts*, *Garnets*, *Agats*, and other Stones less hard, are cut on a leaden Wheel with Smalt and Water, and polished on a Tin Wheel with Tripoly.

These Wheels are fixed on a Table, with a Handle to them, by means whereof the Artist turns the Wheel round with his Left-Hand, holding with the Right the Stone upon it, having before besmeared it over with his Composition. The Stone is fixed with Cement, at the End of a Sort of Scewer, that the Artist may easier lay hold of it.

Turquois, of the old and new Rock, *Japis*, *Girafols*, and *Opal*, are cut and polished on a wooden Wheel with Tripoly.

LAPIDARY, is also used for a Virtuoso skilled in the Nature, Kinds, &c. of precious Stones; or a Merchant who deals in them; which Art or Skill being also of a very great Advantage to those who buy Jewels, that they may not be imposed upon by Knaves and Cheats, who but too often deal in those Commodities, deserves being taken Notice of in this Place; therefore I'll begin by *Diamonds*, and go through all the other precious Stones according to their Excellency, Value, &c.

A rough *Diamond*, must be chosen uniform of a good Shape, transparent, not quite white, and free of Flaws and Shivers. Black, rugged, dirty, flawey, veiny Stones, and all such as are not fit for cutting, are most commonly pounded in a steel Mortar for that Purpose; and when pulverized they serve to saw, cut, and polish the rest. Shivers are occasioned in *Diamonds* by this, that the Miners to get them more easily out of the Vein, which winds between two Rocks, break the Rock with huge Iron Leavers, which shakes and fills the Stones with Cracks and Shivers.

The Antients had two mistaken Notions with Regard to the *Diamond*; the first, that it became soft, by steeping it in hot Goat's Blood: And the second, that it is malleable, and bears the Hammer. Experience shews the contrary; there being nothing capable of mollifying the Hardness of this Stone; though its Hardness be not such that it will endure being struck at Pleasure.

The Goodness of *Diamonds* consists in their Water, or Colour, Lustre and Weight. The most perfect Colour, and most esteemed at present, is the white. The yellow has been a long while in Vogue, and our Ancestors esteemed a black Cast, which they imagined contributed much to heighten the Lustre of the Stone.

The Water called *Cælestis* is the Worth of all, and yet is somewhat difficult to discover in a rough *Diamond*. The only infallible Way is to examine it in the Shade of some tufted Tree.

In *Europe* the *Lapidaries* examine the Goodness of their rough *Diamonds*, their Water, Points, &c. by Day light; in the *Indies* they do it by Night; in order to which, a Hole is made in the Wall a Foot square, and therein a Lamp placed with a thick Wick, by the Light whereof they judge of the Stone, holding it in their Fingers.

As to their distinguishing of *Diamonds* from other Stones, Dr. Wall in the *Philosophical Transactions*, seems to have found an infallible Method. A *Diamond* with an easy slight Friction in the Dark, with any soft animal Substance, as the Finger, Woollen, Silk, &c. appears luminous in its whole Body: Nay if you keep rubbing for some Time, and then expose it to the Eye, it will remain so for some Time. If the Sun be 18 Degrees below the Horizon, holding up a Piece of Bays, or Flannel stretched tight between both Hands, at some Distance from the Eye; and another rubbing the other Side of the Bays or Flannel pretty briskly with a *Diamond*, the Light is much more vivid and pleasant than any other Way. But what Dr. Wall judges most surprising is, that a *Diamond* being exposed to the open Air in View of the Sky, gives almost the same Light of itself, without rubbing, as if rubbed in a dark Room: But, if in the open Air you put the Hand, or any Thing a little over it, to prevent its immediate Communication with the Sky; it gives no Light, which is a distinguishing Criterion of a *Diamond*.

Diamonds are only found in the *East-Indies*, and that only in the Kingdom of *Golconda*, *Visapour*, *Bengal*, and the Island of *Borneo*.

There are four Mines, or rather two Mines and two Rivers, whence *Diamonds* are drawn. The Mines are, 1. That of *Raolconda*, in the Province of *Carnatica*, five Days Journey from *Golconda*, and eight from *Visapour*: It has been discovered about 200 Years. 2. That of *Gani* or *Coulour*, seven Days Journey from *Golconda* Eastwardly. It was discovered 120 Years ago by a Peasant, who digging in the Ground found a natural Fragment of 25 Carats. 3. That of *Scumelpour*, a large Town in the Kingdom of *Bengal*, near the *Diamond* Mine. This is the most antient of them all; it should rather be called that of *Goual*, which is the Name of the River, in the Sand whereof these Stones are found. Lastly, the fourth Mine, or rather the second River, is that of *Saccudan* in the Island of *Borneo*.

In the Neighbourhood of the *Diamond-Mine* of *Raolconda*, the Earth is sandy, and full of Rocks and Copsie. In these Rocks are found several little Veins of half, and sometimes a whole Inch broad, out of which the Miners with a Kind of hooked Irons, draw the Sand or Earth, wherein the *Diamonds* are, breaking the Rocks when the Vein terminates, that the Track may be found again, and continued. When a sufficient Quantity of Earth or

Sand is drawn forth, they wash it two or three Times to separate the Stones therefrom. The Miners work quite naked, except for a thin Linnen Cloth before them; and besides this Precaution, have likewise Inspectors to prevent their concealing of Stones: Which however maugre all this Care, they frequently find Means to do, by watching Opportunities when they are not observed, and swallowing them down.

In the *Diamond-Mine* of *Gani* or *Coulour*, are found a great Number of Stones from 10 to 40 Carats; and even more; and it was here that famous *Diamond* of *Aureng-Zeb* the Great Mogul, which, before it was cut, weighed 793 Carats, was found. The Stones of this Mine are not very clear; their Water is usually tinged with the Quality of the Soil, being black where it is marshy, red where it partakes of red, sometimes green and yellow, if the Ground happens to be of those Colours. Another Defect of some Consequence is a Kind of Greasiness appearing on the *Diamond* when cut, which takes off part of its Lustre. There are usually no less than 60,000 Persons, Men, Women and Children at work in this Mine.

When the Miners have found a Place where they intend to dig, they level another somewhat bigger in the Neighbourhood thereof, and inclose it with Walls about two Foot high, only leaving Apertures from Space to Space, to give Passage to the Water. After a few superstitious Ceremonies, and a kind of Feast, which the Master of the Mine makes the Workmen to encourage them, every one goes to his Business, the Men digging the Earth in the Place first discovered, and the Women and Children carrying it off into the other walled Ground. They dig 12 or 14 Feet deep, and till such Time as they find Water: Then they cease digging, and the Water thus found serves to wash the Earth two or three Times, after which it is let out at an Aperture reserved for that End. This Earth being well washed and well dried, they sift it in a Kind of open Sieve or Riddle, much as we do Corn in *Europe*, then thrash it and sift afresh; and lastly, search it well with the Hands to find the *Diamonds*. They work naked as in the Mine of *Raolconda*, and are watched after the same Manner by Inspectors.

From the *Diamond-Mine* of *Soumelpour*, or the River *Goual*, are brought our fine *Diamond* Points or Sparks, called *natural Sparks*. They never begin to seek for *Diamonds* in this River till after the great Rains are over, that is, after the Month of *December*, and they usually even wait till the Water is grown clear, which is not before *January*. The Season at hand 8 or 10,000 Persons of all Ages and Sexes, come out of *Soumelpour*, and the neighbouring Villages. The most experienced among them search and examine the Sand of the River, going up it from *Soumelpour* to the very Mountain whence it springs. A great Sign that there are *Diamonds* in it is, the finding of those Stones which we *Europeans* call Thunder-Stones. When all the Sand of the River, which at that Time is very low, has been well examined, they proceed to take up that wherein they judge *Diamonds* likely to be found; which is done after the following Manner: They dam the Place round with Stones, Earth, and Fascines, and lading out the Water, dig about two Feet deep: The Sand thus got is carried into a Place walled round on the Bank of the River. The rest is performed after the same Manner as at *Coulour*, and the Workmen watched with equal Strictness.

We are but little acquainted with the *Diamond-Mine* of the Island of *Borneo*, or River of *Succudan*; the Queen who reigns in that Part of the Island, not allowing Strangers to have any Commerce in these Stones; tho' there are very fine ones to be bought at *Batavia*, brought thither by Stealth. They were antiently imagined to be softer than those of the other Mines, but Experience shews they are in no Respect inferior to them.

Besides these four *Diamond-Mines*, there have been two others discover'd; one of them between *Coulour* and *Raolconda*, and the other in the Province of *Carnatica*; but they were both closed up almost as soon as they were discovered: That of *Carnatica*, by Reason the Water of the *Diamonds* was always either black or yellow; and the other on Account of their cracking and flying in Pieces when cut and ground.

The finest *Diamonds* now in the World are that of the Great *Mogul*, weighing 279 Carats; and that of the Great Duke of *Tuscany*, weighing 139 Carats; and that known in *France*, under the Name of *Grand Sancy*, which is one of the Crown Jewels, weighing 106 Carats, whence its Name *Sancy*, which is a Corruption of *Cent Six*, that is 106.—*Tavernier*, by a Rule which he had made for estimating the Value of *Diamonds*, computes that of the Great *Mogul* at 11723278 *French Livres*, equivalent to 779244 Pounds Sterling, and that of the Duke of *Tuscany*, at 2608335 *Livres*, or 195374 Pounds Sterling.

The following is a Rate, or Manner of estimating the Value of *Diamonds*, drawn up by a Person well versed in such Matters, and which for its Curiosity, as well as the Use it may be of to Persons who deal in *Diamonds*, we judge will not be unacceptable.

Table of DIAMONDS.

DUTCH CUT.

A Diamond weighing One Grain is worth from,

<i>Grains.</i>		<i>lib.</i>	<i>Sb.</i>		<i>lib.</i>	<i>Sb. Ster.</i>
1	—	1	0	to	1	1
1 $\frac{1}{2}$	—	1	16	to	1	17
2	—	2	15	to	3	0
2 $\frac{1}{2}$	—	3	12	to	3	15
3	—	4	15	to	5	0
4	—	7	17	to	8	0
5	—	15	0	to	15	15
6	—	22	0	to	25	0
7	—	30	0	to	34	0
8	—	42	0	to	45	0
9	—	60	0			
10	—	75	0			
12	—	112	0	to	120	0
15	—	187	0	to	220	
19	—	330	0	to	380	0
24	—	450	0			
30	—	700	0	to	735	0
40	—	1500	0	to	1800	0
50	—	3500	0	to	4500	0
60	—	4500	0	to	5620	0

It must be observed, however, that Defects in the Water, or Shape, red, or black Spots, Shivers, and other Failings, frequently found in these Stones, reduce the Price by one Third, and sometimes more.

As to brilliant *Diamonds* of very small Cut, the Price is always less by one Third, than that of *Diamonds* of a larger Cut, though the Weight is the same: The Reason is, that the latter shew themselves a great deal more, when set in their Collets, than the former.

Attempts have been made to produce artificial *Diamonds*, but to no Purpose; though a *Lapidary* told me, a long while ago, that he had changed by the Fire, other Stones, such as *Sapphires*, into *Diamonds*; which Fire takes off the Colour of the Stone, and renders it harder; provided the Artist knows how to manage the Degree of Heat, for if it be too great it breaks the Stone.

The fictitious *Diamonds* made in *France*, called *Temple Diamonds*, on Account of the Place at *Paris*, where they are fabricated; fall vastly short of the genuine ones for Hardness; but I have seen some of them, the Lustre whereof eclipsed that of the genuine *Diamonds*. Myself had one once which was valued for its Beauty at 1000 *French Crowns*, and excelled in Lustre a real one of 60 Carats.

Lapidaries usually distinguish three Kinds of *RUBIES*, the *Raky*, *Balaß*, and *Spinell*; some add a fourth Kind, viz. the *Rabecelle*. It is the different Degree of Colour which makes their different Value and Beauty. The *Balaß Ruby* is of a crimson Colour with a Cast of Purple: The *Spinell Ruby* is of a bright rosy red.

It is said the Inhabitants of *Pegu* have the Art of Heightening the Redness and Brilliant of *Rubies*, by laying them in the Fire, and giving them a proper Degree of Heat.

The *Ruby* is formed in a stony Substance, or Marcasite of a Rose Colour, called *Motte of Ruby*; it has not all its Colour and Lustre at once; but comes to

it by Degrees. At first it grows whitish, and as it approaches to Maturity, becomes red. Hence we have white *Rubies*, others half white, half red, and others blue and red, called *Sapphire Rubies*.

When a *Ruby* exceeds 20 Carats, it may be called a *Carbuncle*, the Name of an imaginary Stone, whereof the Antients and Moderns have given us so many Descriptions.

They have several Manners of counterfeiting *Rubies*; and have carried this Imitation to that Length, that the most able *Lapidaries* are sometimes over-
seen.

Furetiere assures us, that there have been *Rubies* in *France* of 240 Carats. *Tavernier* tells us, he saw one in the *Indies* of 50 Carats, which he had a Mind to have bought. He adds, that the King of *France* has finer and larger *Rubies* than any in the Possession of the Great *Mogul*.

There are but two Places in the East where the *Ruby* is found; the Kingdom of *Pegu*, and the Isle of *Ceylon*.—The Mine in *Pegu*, where it is found in greatest Plenty is in the Mountain *Capelan*, 12 Days Journey from *Siren*, the Residence of the King of that Country. The finest *Rubies* brought hence, do not exceed three or four Carats; the King reserving all the larger to himself.

In *Ceylon*, the *Rubies* are found in a River, which descends from the Mountains towards the Middle of the Island: Some few are also found in the Ground. The *Rubies* of *Ceylon* are usually brighter and more beautiful than those of *Pegu*; but they are rare; the King of *Ceylon* prohibiting his People to gather them or traffick with them.

There are *Rubies* also found in *Europe*, particularly in *Bohemia* and *Hungary*; especially the former, wherein is a Mine of Flints of divers Sizes, which upon breaking, are sometimes found to contain *Rubies* as fine and hard as any of the eastern ones.

The Value of *Rubies*, from one Carat, or four Grains, to ten Carats, is thus given us in the *Dictionnaire de Commerce*, from a good Hand.

	l.	s.	d.
A <i>Ruby</i> of one Carat, is worth	1	15	0
— Of two Carats,	9	00	0
— Of three Carats,	22	10	0
— Of four Carats,	33	15	0
— Of five Carats,	45	00	0
— Of six Carats,	67	10	0
— Of seven Carats,	84	00	0
— Of eight Carats,	106	00	0
— Of nine Carats,	150	00	0
— Of ten Carats,	216	00	0

The *SAPPHIRE* is transparent, yet exceedingly hard, so as scarce to bear being engraven.

Different Colours bears different Kinds thereof; the deepest Blues being esteemed Males, and the whitest Females. The *Sapphires* of *Pegu* are the most esteemed. They are found in the same Mines with the *Rubies*. There are some also brought from the Kingdoms of *Calcut*, *Cananor* and *Ceylon*; from which last Place we should be furnished with Abundance, if the King of the Island did not prohibit all Commerce thereof with Foreigners.

The soft *Water-Sapphires* of *Bohemia* and *Silesia*, are of some Account, tho' far inferior to the oriental ones, both in the Brightness of their Blue, and the Firmness of their Texture.

Many People value the *Sapphire* beyond the *Ruby*, and give it the second Place among precious Stones, viz. that next the *Diamond*; others give that Place to the *Ruby*.

Some rank the Cat's Eye, *Oculus Cati*, in the Number of *Sapphires*. This is a Gem remarkable for a fine Diversity of Colours, as well as for its Hardness, which bears a Polish equal with that of a true *Sapphire*.

The *Topaz* is transparent, its Colour a beautiful Yellow, or Gold Colour: It is very hard, and takes a fine Polish. It is the true *Chrysolite* of the Antients, and is found in several Parts of the *Indies*, in *Ethiopia*, *Arabia*, *Peru*, and *Bohemia*.

The oriental *Topazes* are most esteemed; their Colour borders on the Orange: Those of *Peru* are softer, but their

their Colour much the same: The Yellow of those of *Bohemia* is a little blackish; they are the softest of all, and their Polish the coarsest. Those of *Madagascar* were in much Esteem, but are now held good for little.

Tavernier mentions a *Topaz* in the Possession of the Great *Mogul*, weighing 157 Carats, which cost 20300 *l.* Sterling; and *Batius de Boot*, in his Treatise of precious Stones, affirms to have seen in the Cabinet of the Emperor *Rodolphus*, whose Physician he was, a *Topaz* above three Foot long, and six Inches broad. Probably it may be some Marble, a little transparent, of a *Topaz* Colour. The finest *Topaz* I have seen, is at the Abbey of St. *Bertin*, at St. *Omer*.

The *Topaz* is easily counterfeited; and there are fictitious ones, which to the Eye do not come behind the natural ones.

Some say it takes its Name *Topaz* from an Island in the Red Sea, of the same Name, where it was first found by *Juba*, King of *Mauritania*; but it was known to the *Hebrews* before, as it appears from the 118th Psalm.

The *EMERALD* is a very green and transparent Stone, and as to Hardness, next to the *Ruby*.

Pliny reckons twelve Sorts of *Emeralds*; and denominates each from the Provinces or Kingdoms, where he supposed them to be found; as *Scythian*, *Bactrian*, *Egyptian*, *Persian*, &c. but the modern Naturalists and Jewellers, only know of two Kinds, viz. *Oriental* and *Peruvian*. And if we may credit *Tavernier*, in his Treatise of colour'd Stones, found in the *Indies*, inserted in the second Volume of his Voyages, those two should be further reduced to one, viz. the *Peruvian*.

In effect, he maintains that there is not, nor ever was any Mine of *Emeralds* in the *East-Indies*; and that all that are there found, were brought from *Peru* by the Way of the *South-Sea*; which was a Method of Commerce, carried on by the *Peruvians*, before the Discovery of *America* by the *Spaniards*. But as the Point of such Commerce is not sufficiently proved, we must keep to the antient Division.

The *Oriental Emerald* is harder, more brilliant, and transparent than the *Peruvian*; which has generally Clouds found in it, and sparkles less. Besides that there are such Quantities brought from *Peru*, by the Way of *Carthage*, that they are much sunk in Value and Reputation. They talk likewise of *Emeralds* found in *Cyprus*, and even in *England*; but they are very inconceivable; if indeed there be any true ones at all.

Some Authors hold *Emeralds* to be taken out of Iron Mines; and *Pomet* assures us, he had one to which the Iron Ore was still sticking. To which all we have to say is, that it could not be a *Peruvian*, by Reason there is no Iron Mine in the Country.

The *Emerald* is supposed to grow more and more perfect in the Mine like the *Ruby*; and to arrive at its Greenness by slow Degrees, as the Fruit comes to Maturity by Degrees. It is a common Opinion that the *Emerald* grows in the *Jasper*; and it is certain there are some *Jaspers* so perfectly green, that many have taken them for *Emeralds*.

But the proper Matrix, or *Marcasite* of this Stone, is the *Preme*, which is held among the coarser precious Stones; being hard, transparent, half Opake, and usually intermix'd with yellow, green, white, blue, &c.

We read in Authors of several *Emeralds* of incredible Magnitude: *Roderigo de Toledo* tells us, that when the *Saracens* took that Town, King *Tarik* had for his Share of the Plunder, a Table 365 Foot long, and all of a Piece, which he maintains to be an *Emerald*. After this, the Reader will not wonder at that pretended to have been seen by *Theophrastus*, in a Temple in *Egypt*, four Cubits long, and three broad; nor even at an Obelisk of *Emerald*, forty Foot high; *Si credere fas est*.

In the *Dictionnaire de Commerce*, we have a very curious and accurate Estimate of the Value of the different Kinds of *Peruvian Emeralds*; which the Reader will not be displeased to find transcrib'd here.

The first and coarsest Sort of rough *Emeralds*, called *Pagmet*, for grinding, are worth 27 Shillings Sterling, the Mark, or 8 Ounces. The *Demi-Morillons*, 8 *l.* Sterling, per Mark. Good *Morillons*, which are only little Pieces, but of fine Colour, from 13 *l.* to 15 *l.* per Mark. *Emeralds*, larger than *Morillons*, and called of the

third Colour, or Sort, are valued at from 50 *l.* to 60 *l.* per Mark. *Emeralds*, called of the second Sort, which are in larger and finer Pieces than the preceding, are worth, from 65 *l.* to 75 *l.* per Mark.—Lastly, those of the first Colour, otherwise called *Negres Cartes*, are worth from 110 *l.* to 115 *l.*

Emeralds ready cut, or polished and not cut, being of good Stone, and a fine Colour, are worth,

	<i>l.</i>	<i>s.</i>	<i>d.</i>
Those weighing one Carat, or four Grains,	0	10	0
Of two Carats,	1	7	0
Of three Carats,	2	5	0
Of four Carats,	3	10	0
Of five Carats,	4	10	0
Of six Carats,	7	10	0
Of seven Carats,	15	00	0
Of eight Carats,	19	00	0
Of nine Carats,	23	00	0
Of ten Carats,	33	00	0

HYACINTH is thus called from its Resemblance of the purple Flower, named *Hyacinth*, or the Violet. Though this, it must be observed, holds of the antient, rather than the modern *Hyacinth*, which is usually of a deep reddish yellow, approaching a Flame Colour, or the deepest Amber. The antient seems to have been a different Stone, of a purple Colour, tending to blue.

There are four Sorts of *Hyacinths*; those intermixed with a Vermilion Colour; those of a Saffron Colour; those of an Amber Colour; and lastly those of a white, intermixed with a slight red.

Hyacinths, again, are distinguished into *Oriental* and *Occidental*. The *Oriental* comes from *Calicut*, and *Cambaya*, and are equal in Hardness to the *Oriental Amethyst*. The *Occidental* are found in *Bohemia* and *Portugal*, which are a Degree softer.

The Stone graves or cuts fine, and would be more used for Seals, &c. but that the Graving frequently costs more than the Stone.

AMETHYST is a precious Stone of a Violet Colour, bordering on Purple.

There are divers Sorts of *Amethysts*; the *Oriental* which is the hardest, the scarcest, and most valuable, is of a Dove Colour; the *German* which is of a Violet Colour; and the *Spanish* which has the Colour of a Pansy.

There are some *Oriental*, also, of a purple Colour, and others white, and like the *Diamond*. There are also beautiful ones in the *Pyreneans*, and in the Mountains of *Auvergne*.

Amethysts are dug in a Hill named St. *Sigmon*, two Leagues from *Vit*, in *Catalonia*. They find the Stones by following a Vein of reddish or black Earth, or a Vein in the Rock, so colour'd: They are all hexangular, and pointed like crystal.

There are three Sorts; the best are the deepest Violet, others are almost quite white; and some few tinged of yellow. Sometimes there is a great Number sticking together, like the *Bristol* Stones; but these are never good: The best are found loose in the Chinks of the Rock, in a fat, reddish or yellowish Earth. They rake out this Earth with long narrow Knives which enter the Chinks, and then crumble it with their Fingers to feel for the Stones.

The *Amethyst* is not extremely hard, but may be cut with a leaden Wheel, smeared with Emery moistened in Water. It is polished on a Pewter Wheel with Tripoly; it is easily engraven on, either in Creux or Relievo.

The *Beryl*, is a transparent Stone or Gem, brought from *India* of a light or pale green Colour, insomuch that some have represented it as of two Colours, the one green, the other pale.

The *Beryl* of the Antients is the same with what in latter Times, has been denominated *Aqua Marina*, by reason of its Azure or Sea-green Colour.

The *Beryl* differs from the *Chrysoberil*, which is somewhat paler, and partakes more of the yellow, and from the *Chrysoprusus*, which partakes more of the Green.

Some Authors take the *Beryl* for the *Diamond* of the Antients; this is certain, the ablest modern Jewellers have

sometimes mistaken the one for the other.

The *Beryl* is sometimes found in Pieces large enough to form fine Vases. It is said there are many of them in *Cambaya*, *Martaban*, *Pegu*, and *Ceylon*.

The *CORNELIAN*, is a precious Stone ordinarily red, bordering on Orange, called also *Sardius*, or the *Sardian Stone*. It is but little transparent, cuts easily; and we find most of the fine Gravings of Antiquity, whether in *Relievo* or indented, are on this Stone. It bears the Fire admirably.

The finest *Cornelians* are those brought from near *Babylon*, the next are those of *Sardinia*, the last those of the *Rhine*, *Bohemia*, and *Silesia*. To give these Stones the greater Lustre, in setting them they lay a Piece of Silver Leaf underneath.

The principal Use made of *Cornelians* is in Seals, by reason they grave well, and take a fine Polish.

GRANATE, popularly called *Garnate*, is a precious Stone of a high red Colour, thus called from the Resemblance it bears of the Kernel of a Pomegranate.

Granates are either *oriental* or *occidental*; the first are brought from divers Parts of the *East-Indies*, the second from *Spain*, *Silesia*, and *Bohemia*.

Those from the *East* are distinguished by their Colour into three Kinds; the first of a deep brownish Red, like black clotted Blood; of which Kind there are some as big as an Hen's Egg. The second are nearly of the Colour of a Hyacinth, with which it were easy to confound them, but for their superior Redness. The last, having a Mixture of a Violet with their Red, are called by the *Italians*, *Rubini della rocha*.

The *occidental Granates* are of divers Reds, according to the Places they are found in. Those of *Spain* imitate the Colour of the Kernels of a Pomegranate: Those of *Bohemia* have a golden Cast with their Red, glittering like a live Coal: Those of *Silesia* are the darkest of all, and seldom thoroughly transparent.

Of the *occidental Granates* those of *Bohemia* are the most valued: Some even give them the Preference to the oriental Kind. They are found near *Prague*; not in any particular Mines, but are picked up by the Peasants in the Fields from among the Sands and Pebbles.

The *AGAT*, is a precious Stone, partly transparent, and partly opaque, usually diversified with a Variety of Colours, Veins, Spots, &c. sometimes exhibiting Figures, or Appearances of natural Objects.

There are various Kinds of *Agats*; which according to their different Colours, Degrees of Transparency, &c. have different Names. The Principal may be reduced to these four, viz. the *Onyx*, *Calcedony*, the *Black*, and the *German Agats*.

The *Agat* has ordinarily a reddish Teint, but is finely variegated with Spots and Stains, many of which seem very naturally to represent Woods, Rivers, Trees, Animals, Fruits, Flowers, &c. *De Boot* mentions one of the Size of a Nail, wherein a Bishop with his Mitre was very well represented: Turning it a little, a Man and a Woman's Head were seen in his Place. One *Gautier* a Benedictine Monk of the Congregation of *St. Vanne* in *France*, whom *Stimulus Carnis* spurred on to change here his Religion for a Petticoat, tells me, that they have an *Agat* at their Abby of *Montier-Ramey*, on which *Mary Magdalen* in the Posture of a Penitent, with a Death's Head in her Hand, is extremely well represented.

The *Sardians*, and *Sardonix Agats* are very valuable; the latter is of a Sanguine Colour, and is divided into Zones, which seem to have been painted by Art. *Pliny*, *Strabo*, and *Cicero* say, that *Polynates* Ring was a *Sardonix*.

Authors also speak of *Roman Agats*, *Egyptian Agats*, *Onyx* and *Sardonix Agats*, &c. The Antients mention a red *Agat*, spotted with Points of Gold, found in *Candia*, and called *Sacred*, as being a Preservative against the Poison of Vipers, Scorpions, and Spiders. *Pliny* has a whole Chapter of the Virtues of *Agats*.

Agats have always been esteemed for Seals, as being a Stone that no Wax will stick to.

M. du Fay a Frenchman, has given the Art of staining *Agats* with divers beautiful Colours. The Figures and Ramifications of *Agats*, whether natural or artificial, may be discharged with *Aqua fortis*.

The *Onyx*, is a Kind of precious Stone, accounted a Species of opaque *Agat*. It is of a dark horny Colour, in which is a Plate of a bluish White, and sometimes of Red; the several Colours appearing as distinct as if laid on by Art.

There are some brought from *Arabia*, mixed with a brownish Hue; which after taking off one Lay or Zone, shews another underneath of a different Colour. Whence they take the Name *Memphitis*, or *Camebua*, q. d. another Stone.

White Zones or Girdles, are essential to an *Onyx*.

The *Sardonix*, is a Kind of precious Stone, partaking partly of the *Sardian*, and partly of the *Onyx*.

It is semi-transparent, and reddish bordering on White, somewhat like the Nail of the Hand: In some the Red inclines to a Yellow. It is brought from the *East-Indies*, *Arabia*, and *Bohemia*; it was anciently much used for fine Vessels.

The *TURCOIS*, or *TURQUOIS*, is a precious Stone of a blue Colour, ordinarily opaque, but sometimes a little transparent.

There are *Turcoises* both oriental and occidental, of the new Rock and the old. The oriental partakes more of the blue Tincture than the Green, and the occidental more of the Green than the Blue. Those of the old Rock are a deep Blue, and those of the new Rock more whitish, and do not keep their Colour.

The oriental Ones come from *Persia*, the *Indies*, and some Parts of *Turky*; and some even suppose that it is hence they derive their modern Name *Turcois*. The Occidental are found in various Parts of *Europe*, particularly *Germany*, *Bohemia*, *Silesia*, *Spain*, and *France*.

Turcoises all grow of a round or oval Figure; they cut easily, and besides Seals, which are frequently engraved on them, some are formed into Crucifixes, or other Figures near two Inches high; though *de Boot* mistakenly affirms, that none have been known to exceed the Bigness of a Walnut.

The *Turcois* is easily counterfeited, and that so perfectly that it is impossible to discover the Deceit, without taking it out of the Collet.

The *Turcois*, *M. Reaumur* observes, is one of the softest of precious Stones, its Hardness scarce exceeding that of a Chrystal, or a transparent Pebble; though some are much harder than others; and still the harder, *ceteris paribus*, the more valuable, by reason of the Vivacity of the Polish, which is always proportionable to the Hardness.

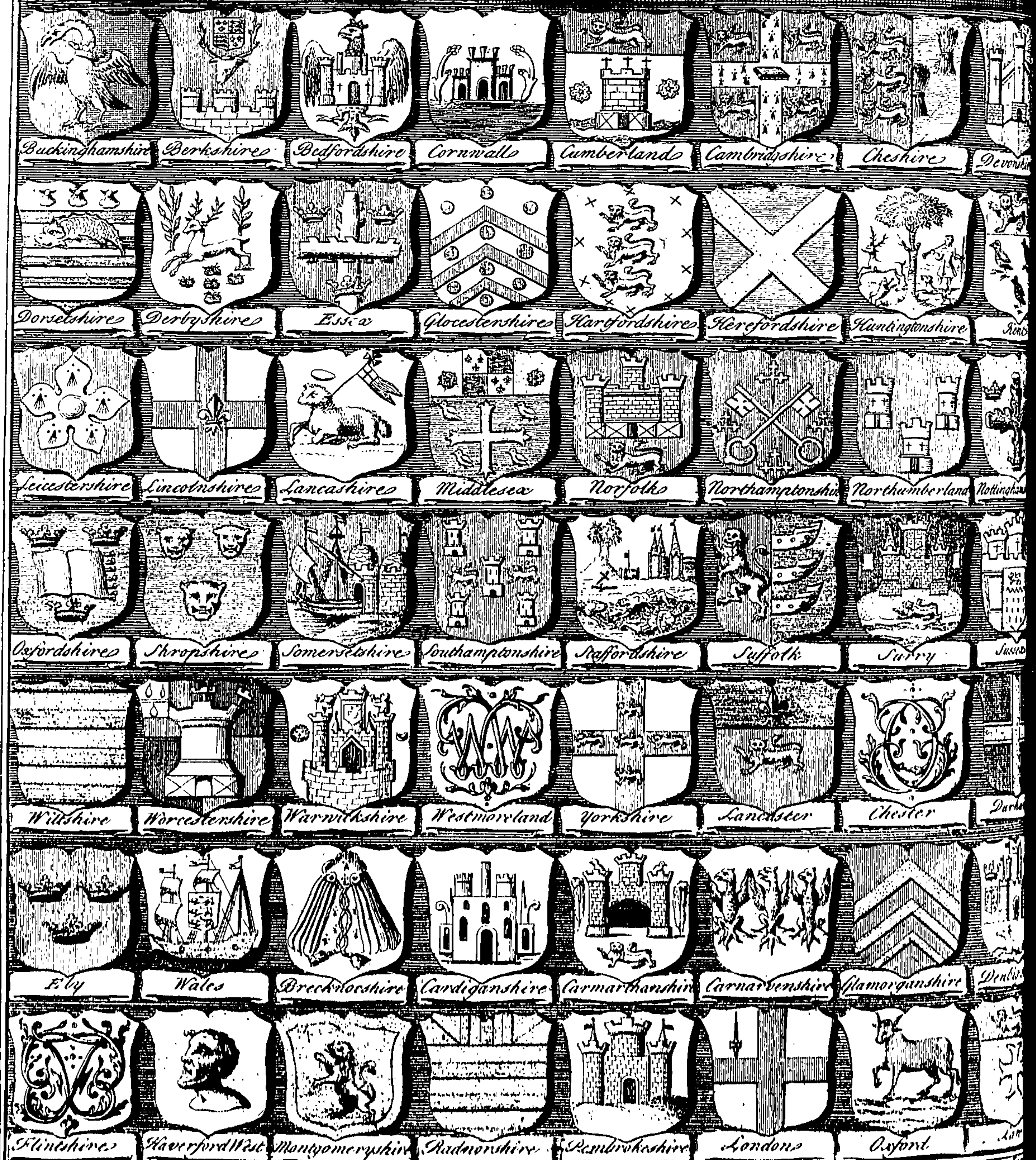
Rosnel a Jeweller, and the Author of a scarce Treatise, called *Mercurie Indian*, estimating the several precious Stones, sets a hard *Turcois*, whose Blue is neither hard nor deep, on the Foot of the most perfect *Emeralds*, that is on a level with a *Diamond*. Those with any Defect he only values a *French Crown* the Carat.

Tavernier assures us, that there are but two Mines of *Turcois* known in all the Earth, and they are both in *Persia*; the one called the *Old Rock*, near a Town called *Necabourg*, three Days Journey to the North-East of *Meched*; the other called the *New Rock*, is five Days Journey. The latter, he adds, are but little valued; and the King of *Persia* has for many Years prohibited the digging in the former for any but himself. *M. Reaumur* takes the *old Rock* to be now exhausted; in effect, the common Division of *Turcoises* into the *old Rock* or oriental, and *new Rock* or occidental, is very arbitrary and precarious. All the best and most perfect, grow where they will, in *India* or *Europe*, are reckoned among the former, and the rest among the latter.

Near *Simere*, in the lower *Languedoc* in *France*, are several considerable Mines of *Turcoises*; but the blue Colour admired in the *Turcois* is not natural to these Rocks; the prevailing Colour being sometimes white, and sometimes much like that of *Tripoly* of *Vence*. Other precious Stones are dug out of the Mine with all their Colour, to the Force hereof nothing can be added, though it may frequently be diminished, as we see Fire bring down the too deep Colour of the *Sapphire*, and quite take away that of a deep *Sapphire*. These *Turcoises* on the contrary, are naturally whitish or yellowish, of a Colour as common as that of a *Free-Stone*; and by opposing them for some Time to the Action of the Fire, they assume a blue Colour.

THE GREAT SEAL OF ENGLAND.

THE SEAL OF THE LORD MAYORS CO.

The SEALS of the
Several Countiesin ENGLAND and
WALES.

To give them that Colour, they dry them awhile in the Air, then heat them gradually in a Furnace made after a particular Manner. If they be heated too hastily; the Humidity between the Lamine of the Stone, wanting Time to evaporate all, will separate into Scales or Flaws. Some of the Stones require a greater Degree of Heat, to bring them to their Colour, than others; and even in large Pieces, several Parts, ordinarily, require several Degrees of Heat.

On this Account a World of Care is to be taken in the heating them; for the Fire, which gives them their blue by Degrees, if they be exposed beyond a certain Degree, takes it away again.

The great Defect of all *Turcoises* is, that in Time they lose their blue Colour, and become green, and then cease to be of any Value.

The OPAL is a precious Stone of various Colours, changeable according to the different Position of the Stone to the Light.

In it are seen the red of the Ruby, the Purple of the Amethyst, the green of the Emerald; besides yellow, blue, and sometimes black and white. When the Stone is broke, most of these Colours disappear; which shews that they arise by Reflection from one or two principal ones.

Its Form is always either round, or oval; its prevailing Colour white. Its Diversity of Colours makes it almost of equal Value with a Sapphire or Ruby.

Tavernier says, that there are Mines of Opal in Turkey. Other Authors, antient and modern, say, Cyprus, Arabia,

Egypt, Bohemia and Hungary, produce it; whence it is distinguished into two Kinds, *Oriental* and *Occidental*; they polish it with Tripoly. *Pliny* and *Solinus* mention a Species of Opal, called *Exacantalibus*, which had sixty Colours.

In the *Philosophical Transactions*, M. *Colepreffe* gives us an Account of the Manner of counterfeiting Opal, as practised at *Haerlem*. He says the Counterfeit is very lively, and thinks it only performed by the Degrees of Heat, which produce the Colours. When the Composition is melted, they take out some on the Point of an Iron Rod, which being cooled, either in the Air or Water, is colourless or pellucid; but being put into the Mouth of the Furnace on the same Rod, and there turned by the Hand for a small Space, has its little Bodies so variously posited in divers Parts of the same Piece, that the Light falling on them, being variously modified thereby, represents the several Colours seen in the natural Opal. He adds, the Colours may be destroyed and restored, according to the various Motions of its Particles, by Heat.

Note, That the Art of cutting precious Stones is very antient; but, like other Arts, its Original was very imperfect: The *French* have succeeded in it the best; and the *Lapidaries* of *Paris*, who have been a Corporation since the Year 1290, have carried it, especially cutting Diamonds called *Brilliant*s, to its utmost Perfection.

L A W.

LA W, considered with respect to itself, is commonly defined the Rule, or Regulation of the human Acts, whereby we are directed to do what is right, and omit what is wrong: Which with respect to the Legislator, can also be defined a right Reason of commanding, and forbidding, according to *Tully*, *lib. 1. de legib.* or a rational Rule, commanding what's honest, and forbidding the contrary. For the Precepts of the Law are of two Sorts; the one which commands Good, and are called *Positive* or *Affirmative*, as *Thou shalt love God*; and the other forbidding Evil, called *Negative*, as *Thou shalt not kill*.

Note, That the Etymology of Law is either from *Legendo*, Reading; or from *Eligendo*, Choosing; or from *Ligando*, Tying, Obligating. — It may be deduced from *Legendo*, Reading; for though it is not essential to the Law that it should be written, according to *Justinian's* Institutions, *c. 25. q. 2.* and to *Aristotle*, *lib. 10. Eth. c. 9.* where he expresses himself in these Words; *Whether the Laws be written, or not written, it does not seem to matter much*: The Law, notwithstanding, is most commonly written, that every Body may read in it what he is to do, or to avoid. — It may also be derived from *Eligendo*, Choosing; because Law is like a certain chosen Rule, or Form of Living. This Etymology is that of *Tully*, *lib. de leg.* Lastly, it may be derived from *Ligando*, Tying or Obligating; because it obliges the Subjects to its Observance.

Note, also, That Law, in general, is called by five different Names; viz. *Right*, *Precept*, *Command*, *Statute*, *Constitution*.

1. It is called *Right*, because it establishes Justice and Equality in Things; according to *St. Augustin*, *lib. 1. de arbit. c. 5.* *That does not seem to me to be Law*, says he, *which is not just*.

2. It is called *Precept*, because it expresses the Authority of the Legislator.

3. A *Command*, because it ought to command the Execution.

4. A *Statute*, because it must be constant and firm.

5. A *Constitution*, because often several meet together to make and establish the Law.

All Law is either *natural*, or *positive*. — The *natural* is immutable; and the *positive* subject to Alterations and Changes.

The *natural Law* is considered either in God or in us. In God it is called *eternal Law* or *eternal Order*. In us it is either called *right Reason* or *natural Light*; or retains simply the Name of *natural Law* or *Order*.

The *positive Law*, is that established by the Free-Will of a Legislator; and the different Alterations or Changes thereof, are called by different Names by the *Roman Jurisconsultes*. For among them the Law is defined, *lex rogatur*, when it is made, because there was no Law made unless asked by the People. It is *abrogated*, *abrogatur*, when entirely abolished; *derogated*, *derogatur*, when Part thereof was taken off; *subrogated*, *subrogatur*, when Additions were made thereunto; and *abrogated*, *abrogatur*, when some Changes were made in it.

The *positive Law* is either divine or human; the first is from God, and the latter from Men.

The *divine Law* is contained in the Old and New Testament; whence it is either antient or new.

The *old* or *antient Law*, is that given to the *Hebrews*, by the Ministry of *Moses*, or as the Apostle expresses himself, *Gal. iii. 19.* *It was ordained by Angels in the Hand of a Mediator*.

The *new Law* is called the *Law of the Gospel*, or of the New Testament, is that brought to all Men by Christ, Author of the *New Testament*.

The *human Law*, is that made and established by Men; and this is either *ecclesiastical* or *civil*.

The *ecclesiastical Law*, before the Reformation by *Luther* and *Calvin*, consisted, and consists still among the Catholics, in the Canons of the general Councils, the Sentiments of the Fathers, and the Constitution of the Popes, called *decretal*.

The *Civil Law* consists in the Constitutions of a Republick, or in the Edicts of Emperors, and Kings, in the Decisions of a Senate, or of the Canons, in the Answers of prudent Men, and in a long Custom, approved by the unanimous Consent of the People. This seems to be the general Division of all Laws.

As to the Matter subject to Law, it is the *Right itself*, or what is just, or what is acted or omitted justly. Though *Jus*, or *Right*, is also taken for the Art itself,

or

or Science of the *Law*. And in that Sense is defined by *Celsus, lib. 1. ff. rit. 1. leg. 1. The Art of the Good and Just.*

Therefore *Right* taken for the Matter subject to *Law*, is divided in the same Manner as the *Law* itself, viz. different is the *natural Right*, which Nature has taught us, and which is immutable; different is the *Right of Nations*, which is religiously observed, at least among the best civilized Nations; different is the *positive Right*, and this is either divine or human, which is, besides, either *Ecclesiastical* or *Civil*.

It may be asked in this Place, if *Promulgation*, or publick Notice, be essential to a *Law*?

Which I answer in the *Negative*, with Regard to the *natural Law*, and in the *Affirmative*, with Regard to the *positive Law*.

That the *natural Law* wants no *Promulgation*, is evident from its very Name, for it is called *natural*, for no other Reason, than it is naturally known to us, God having imprinted it on the Mind of all Men, with out Exception.

But the *positive Law* wants *Promulgation*, since it cannot be otherwise known to us, but by a publick Notice, whereby the Will of the Legislator is made known to those who are to observe that *Law*; for the Precept of the *Law* is nothing else but the *Intimation*, or publick Notice given by a Superior to an Inferior, that he may act accordingly.

Having thus spoke of *Law* in general, I must enter into a more particular Detail of the different Divisions and Sub-Divisions thereof, beginning by the *Eternal Law*.

Every Body agrees, that the *Eternal Law* is the Source of all others, and the first Rule of all our Actions. For it is nothing else but an *Eternal Order*, or the immutable Decree of the supreme Wisdom, wherein is contain'd all that's to be done or avoided; For the *Eternal Law*, says *St. Augustin, lib. 22. cont. Faust. c. 27. is the divine Reason, or God's Will commanding to preserve the natural Order, and forbidding to disturb it.* That natural Order, mentioned in this Place by *St. Augustin*, is that, says he himself, *lib. 2. de ordin. c. 10. whereby all Things are done, which God has established.* Therefore the *Eternal Law* is an immutable Reason, to which all that is done rightly and justly is agreeable, and all that is done wrong disagreeable.

If it be asked here, if the *Eternal Law* be different from *Providence*? I'll answer in the *Affirmative*. 1. Because *Providence* relates only to particular Things in an Individual, since other is the *Providence* with Regard to *Peter*, and other that with Regard to *Paul*. But *Law* regards a Commonality; for there is no *Law* made for every particular Individual. 2. Because *Law* includes a Will of obliging, and *Providence*, not.

The *natural Law*, which is also called *right Reason*, *natural Light*, and *natural Order*, is the *Eternal Law* itself, or a certain Participation of the *Eternal Law*, in a rational Being, whereby he is made capable to distinguish between Good and Evil.

Note, That the *natural Law* is not taken by the Juris-consults in the same Manner the Theologians take it. For the Juris-consults, or Lawyers, call *natural Law*, that which Nature has taught all Kinds of Animals without Distinction, such as their Conservation, Procreation, the Education of Children, &c. But the Theologians call *natural Law*, that which God has imprinted on Man's Mind.

That this *natural Law* is imprinted in our Minds, is evident from that every Body understands what is good, and what is bad.

This was the Sentiment of the most eminent Fathers of the Church, and of the greatest Philosophers.

Among the Fathers, *St. Augustin, lib. 2. confess. c. 4.* speaks thus, *Thy Law, O Lord, is written in the Hearts of Men, which Iniquity has not, and never will blot out.*

The primary Precepts of the *natural Law*, or rather the whole Foundation thereof, is to love God above all Things, and our Neighbours for his Sake; because the *Eternal Order* has prescribed, first, that we should love God above all Things, and our Neighbours for his Sake; the

Truth whereof will soon be discover'd, if we will reflect, that we have all been created by an omnipotent God; and therefore Order requires,

1. That we should love God above all Things, and express continually our Gratitude for the many Favours we receive daily from him.

2. If we love God as we ought, because Order requires it; we must, likewise, love Men, who have the same Origin with us, have been formed by the same Creator and for the same End, and enriched by him with the same natural Gifts.

It may be asked in this Place, If the *natural Law* be equally known, and approved by all as right and just?

Note, That before I answer this Question, we must observe, 1. That by the Name of Principle is understood that whereby something is done, or known; whence it appears, that there are two Principles, viz. one of the Thing, and another of Cognition.

2. That there is a first Principle of Cognition, because as in the Motion, there is the first immobile Mover; likewise with Regard to Reason (which is a certain Motion) it is necessary to establish a Principle known by itself, by Reason whereof all Things are known.

3. That the first Principle, known by itself, in a *speculative Reason*, is this, that it is impossible for something to be and not be, together, and at the same Time. And in a *practical*, this, Good is to be embraced, and Evil avoided.

4. That from the first and general practical Principle, are derived all the other Precepts of the *natural Law*, v. g. that we must love God, injure no Body, &c.

5. That some of the Precepts of the *natural Law*, are more universal and known than others, the more they come near the first Principle, and are less known the more they recede from it; as it appears from the Scheme of the Precepts deduced from the first, and are drawn from one another as Conclusions, as in the following Series of the Scheme.

Evil must be avoided.

Injury is to be offer'd to no Body.

No Thieving.

No giving to Usury.

6. That there are two Sorts of Ignorance, one vincible, and the other invincible. These pre-observ'd,

I answer, 1. That the first Principle, and other universal Precepts, known by themselves of the *natural Law*, cannot be unknown of an invincible Ignorance.

I answer, 2. That the Precepts of the *natural Law*, deduced with a great Difficulty, and by an unevident Consequence, from the Precepts of the Decalogue, can be sometimes unknown to several, of an invincible Ignorance. Because several Philosophers, who have applied themselves seriously to discover Truth, have erred with Regard to those Precepts, believing, v. g. that *Usury* was lawful, as well as an officious Lie, to save one's own Life, or that of some Body else; therefore much more other Men, who have not their Knowledge.

It may be asked, if the *natural Law* can be changed?

Note, That it is asked here, if the *natural Law* can be changed in the three following Manners. 1. So that in fact it may be changed according to itself. 2. So that it may be entirely blotted out, by a certain Abrogation, from Man's Memory. 3. By the Addition of some new Precept. 4. By the Substraction of some. These pre-observ'd,

I answer, 1. That the *natural Law*, with Respect to the first Principles, is immutable; but can be changed, sometimes, with Respect to the Conclusions drawn from the first practical Principles. Because in the Practice, the Conclusions do not always depend from certain practical Principles, but from the various Circumstances of Places, Times, and Persons. In this Sense, Lawyers say, that in the *Law* the Definitions are very dangerous. For Example; though we are obliged to return every one his own, a Case, notwithstanding, may occur, in which it is not to be return'd, v. g. if the Proprietor thereof design

design to make Use of it to the Detriment of the Republick.

I answer, 2. That the natural Law cannot be blotted out from the human Mind, with Regard to the first Principles, but can sometimes with Regard to the Conclusions deduced from the first Principles: Because, sometimes the human Understanding is so blinded, either by false Opinions, or by his Passions, or by a continual Habit of sinning, that he mistakes often Evil for Good, and Falshood for Truth.

I answer, 3. That the natural Law can be changed by the Addition of some other Precept; because the Precepts of the natural Law are common, and cannot be so soon applied to particular Circumstances; whence it is necessary to add some particular Laws adapted to certain Persons, Places, and Times, and thereby determine the common Precepts. For Example, that common Precept, *God is to be worshipped or served*, does not determine when he is to be worshipped, but is determined by other Precepts of the positive divine Law, in both Testaments, *v. g.* by the particular Precepts of the Sacrifices, Prayers, Sacraments, &c.

I answer, 4. That the natural Law cannot be changed, by manner of Subtraction, at least with Regard to the first Precepts in that Sense, that something which was before according to the natural Law, be no longer so. Because, though it be entirely immutable with Regard to the first Principles, as we have already observed, it notwithstanding can be changed with Regard to the Conclusions, if not in all, at least in several; for some particular Causes hindering the Observance of such Precepts.

From what I have said it may be inferred, that the natural Law can neither be abrogated, nor one derogate to it; because the Obligation of the natural Law proceeds from the Nature of Things itself, which cannot be changed; notwithstanding that by the Law of Nations, Servitude, and the Division of Goods have been introduced; because neither Liberty nor the Community of Goods are of a natural preceptive Right, but only of a permissive one; and therefore the Law of Nature leaves it indifferent, whether Goods be proper or common.

Our next Question is, *If Dispensation has Place in the natural Law?*

Note, 1. That it is not Question here of the first and most universal Precepts of the natural Law; since every body knows that they are indispensable; but that it is Question of those, which, with Respect to the most universal and first Principles, are as Conclusions deduced evidently from them; such are the Precepts of the Decalogue.

2. That of the Precepts of the natural Law, some are Affirmative, and command the Action always, but not for all Times, such is this Precept, *God is to be served*; and others Negative, which forbid the Action always, and for all Times; so that there is not one Moment where the forbidden Action is allowed; such is the Precept which forbids Blasphemy and Perjury.

3. That the negative Precepts of the natural Law either oblige simply always, and in all Circumstances, such are those which forbid Falshood, Perjury, Blasphemy, Idolatry, &c. or not oblige always and for all Times, but only in certain Circumstances, so that they do not oblige, if those Circumstances be changed; such is the fifth Precept of the Decalogue, *Thou shalt not kill*; for it only obliges under these Circumstances, *viz.* that it is not lawful to kill a Man with one's own private Authority, unless forced to do it in one's own Defence; but it does not oblige not to kill a Man by a publick Authority, or in one's own Defence, and if one's Life cannot be safe otherwise. These pre-observed,

I answer, 1. That a Man cannot dispense in the natural Law; according to Lactantius, lib. 1. de divin. instit. c. 8. To that Law, says he, it is not permitted to prerogate, nor lawful to derogate something from it; neither can it be entirely abrogated, or we dispensed from it, either by the Senate or by the People: Because, if according to that Maxim of Law in c. 6. *An Equal has no Authority over his Equal*, much less an Inferior over his Superior; whence it follows that a Man who is Inferior, cannot dispense with the Law of God who is his Superior.

I answer, 2. That God himself cannot dispense with the natural Law; because suppose, as it is true, that the natural Law be nothing else but a Copy of the eternal Law, that Copy cannot be blotted out in a sound human Understanding; unless the Abolition and Mutation be first in the divine Understanding, which it is an Impiety and an Absurdity to imagine. And because God cannot grant to a private Person to dispense with a Law remaining in Force with Regard to himself.

It may be objected to this, that God dispensed first with *Hosea*, that he might commit Fornication, *Hosea i.* Secondly with the *Israelites*, that they might rob the *Egyptians*. *Exod. xiii.* Thirdly, with the Patriarchs in the Polygamy: Therefore God can dispense in the natural Law.

I answer to the first Part of this Objection, that God did not allow *Hosea* to commit Fornication, but only to take for his Wife a Woman which had been a Fornicatrice, which was not against the Law of Nature; therefore he did not dispense, since that is lawful to every Body.

As to the second Part, God did not permit the *Israelites* to carry away what belonged to others, but only what was their own Property, by the Donation God had made of it to them; because, as sovereign Lord of all, he had transferred the Property of the Goods of the *Egyptians* to the *Hebrews*.

To the fourth I answer, that Polygamy is not against the Law of Nature, since it answers the End of the Creation, which is the Multiplication of the human Race.

We'll ask next, *If the natural Law admits of Interpretation?*

Note, 1. That there are two Sorts of Interpretations, one called simple, and the other by *Epicky* or Equity. The Law wants the first Sort of Interpretation, that the Sense thereof may be understood. But the Law is said to want the second, when it wants to be amended and corrected, in a Case where it would be against Justice and the Intention of the Legislator to observe it. If I be asked, what is properly *Epicky*? I'll answer, that it is the Virtue whereby a Man, without Regard to the Letter of the Law, follows what is most agreeable to Justice, common Utility, and the Intention of the Legislator.

2. That the natural Law may be considered in two Manners; 1. According to itself; 2. As it is carried by some positive Law. These pre-observed,

I answer, 1. That a simple Interpretation can have Place in the natural Law, whether considered according to itself, or likewise as included in some positive Law; because the Precepts of the natural Law being not all equally clear, nor all equally easy to be understood; it happens hence, that some of them want Interpretation, whereby their true Sense may be known.

I answer, 2. That the natural Law considered in itself, admits of no Interpretation by *Epicky*; because that Law which wants no Amendment, admits of no such Interpretation; but the natural Law considered in itself wants no Amendment; because as it is founded on right Reason it cannot fail, or if it fails, it must be confessed that it is not right Reason, nor consequently a Law.

From the natural Law I'll pass to the Law of Nations, and ask first, *what is the Law of Nations, and whether it pertains to the natural Law?*

I answer, 1. That the Law of Nations is that which natural Reason has established among Men, and which is observed almost by all Men.

1. It is called Law, because it has the Property of a Law, which is that it should be entirely just.

2. Which the natural Reason or Light has established among Men, because through the Exigency of their Affairs, Men of almost all Nations have established it.

2. And which is observed by almost all Men; because almost all Nations observe that Law to which they have almost all given a Sanction.

If I be asked, which are those Precepts which have been made, and are kept by almost all Nations? I'll answer, that the principal of them are *Manumissions*, *War*, the Difference made between Nations, the Condition of Kingdoms, the Difference of Government, the Partitions of Lands

Lands, Buildings, Commerce, Emptions, Venditions, Locations, Conductions, &c.

I answer, 2. *That the Law of Nations pertains rather to the positive than to the natural Law*; because established and calculated by Men for the Security of the Civil Society; for it differs from the natural Law, in that the Institution of the natural Law does not depend of Men, and is not said to be in Force among almost all Men, but among all without Restriction.

From what I have said it may be inferred, that the *Law of Nations* differs from the natural Law in four Manners: 1. Because the Object of the Law of Nature is a necessary Good or a necessary Evil: When as the Object of the *Law of Nations* depends entirely of Men's Will, *v. g.* it depends of Men's Will, that there should be or not, a Partition or Property of Goods and Power. 2. Because the natural Law properly said cannot be changed; when as the Law of Nations is not only mutable, but has been changed in fact, *v. g.* with Regard to Servitude or Slavery, which is not suffered among Christians. 3. Because the Law of Nature is absolutely common to all Nations, notwithstanding, that in some Places perhaps it is not observed, through Ignorance: But the *Law of Nations*, though very common, can notwithstanding be confined within narrower Limits, at the Nation's Pleasure.

Note, That from the natural Law, I'll pass to the divine.

Note, also, That God had created Man to his Image and Resemblance, had given him a Mind adorned with Reason, inclinable of its Nature to Good, and to be entirely directed by his Free-Will. He had received from his Creator but one *Law*, the Observance whereof was so easy, that nothing was forbidden thereby but the Fruit of the Tree of Good and Evil; but conquered by the external Suggestion of the Woman, not by the internal one of the Concupiscence, which was not yet within him; he violated God's first Commandment, by tasting of the forbidden Fruit. Hence the corrupted Source of all our Evils. Hence the Concupiscence began to revolt against Reason, and to exercise its tyrannical Empire on all Men born from those first Prevaricators; a glaring Example whereof we have in their first Children. *Cain* inflamed with Jealousy, as if the whole Universe was too narrow to contain them both, killed his Brother *Abel*. Their Posterity carried Impiety to a supreme Degree; so that in *Noah's* Time all Flesh had corrupted its Way, nor could the raging Flames of Man's Concupiscence be extinguished, but by opening the Cataracts of Heaven, and lacerating the very Bosom of the Deep, to blot out by an universal Deluge, to the minutest Lineaments of the Face of the Earth, so much disfigured by Men's Iniquities. But the human Race was scarce repaired by *Noah's* Children, but they returned to their Vomiting, and having neglected the Worship of the true God, they had the sacrilegious Ingratitude to offer their Vows, and lift up their Eyes and Hands to Idols.

The Number of Men being prodigiously increased, they began to think of dividing the Earth between them; but before their Separation, the Tower of *Babel*, or of *Confusion*, began by their sacrilegious Presumption, was interrupted by a more potent Authority. There began the Confusion of Languages, and the Division of the common Tongue into several: So that they being thereby deprived of that Commerce which united them together, some of them departed to inhabit some other Parts of the Earth; but though separated from one another, as well by the Distance of the Places, as by the Diversity of Language; they notwithstanding agreed in the Perpetration of all Kinds of Enormities. But God, *who is rich in Mercy*, selected to himself from among them some Persons, and among the rest *Abraham*, who was chosen by him in a special Manner to be Father of the Faithful; from whom descended the *Hebrews*, whom *Moses* delivered from the Captivity of *Egypt*; but this *stiff-neck'd People*, as they are called in the Scripture, very little grateful for the continual Favours they had received from God's munificent Hand, and following

rather the effrenate Motions of Nature vitiated by *Adam's* Sin, than the Dictates of their Reason, preferred the Creatures to the Creator, and rebelled often against their Conductor. Then, by the Example of the Gentiles, committed all Sorts of Crimes against the Law of Nature, where, to revive that Law, almost entirely extinct among the *Jews* as among the *Pagans*, and to strengthen Reason against the natural Cupidity, the Law of Nature was to be renewed by a positive one, contained in the ten Commandments given to *Moses* on Mount *Sinai*; in which ten Commandments was included all that was necessary to regulate their Conduct and reform their Manners: So that the Decalogue is nothing else but the natural Law put in Writing.

But as the People was frightened at God's Presence, they desired *Moses*, that as their Ambassador, he should return to God, where he received the judicial Laws, in which are contained all that related to the Administration of Justice among the *Jews*; but as it would be needless to transcribe here all those Laws, since they can be found in *Exod. xxi. xxii. xxiii.* I'll content myself to mention here the Principal.

An *Hebrew* Slave bought with Money, shall serve six Years, and afterwards be free; but if on his own Accord he remains in Servitude, he shall have his Ears bored, and serve for ever.

He that kills a Man designedly shall be put to Death, and be sent into Exile if he does it by Accident.

He that smites his Father shall surely be put to Death.

If a Man smites his Servant or his Maid, so that he or she die of the Blow, he shall be surely punished.

If a Man hurts a Woman with Child, so that her Fruit departs from her, and yet no Mischief follows, he shall be surely punished according as the Woman's Husband will lay upon him; and he shall pay as the Judges determine. And if any Mischief follow, then he shall give Life for Life, Eye for Eye, Tooth for Tooth, Hand for Hand, Foot for Foot, &c. In this Place is established the general Law *Talionis*, whereby it was decreed, that the Punishment should be the same with the Offence. Which *Law Talionis*, passed into that of the twelve Tables, as it appears from the Institutions of *Justinian, lib. 4. Tit. 4.*

If a Thief, breaking a House in the Night, be wounded in doing it, and dies afterwards of his Wound, there shall no Blood be shed for him. But if the Sun be risen upon him, there shall be Blood shed for him; for as *St. Augustin* says, *quest. 84. in Exod. It is easy to see that he came to rob, not to be killed.* Therefore the divine Law decreed in this Place, that every Man should be the Executor of Justice against a nocturnal Thief. Which divine Law was likewise transmitted into that of the twelve Tables; for by that Law it was lawful to *repel Force by Force*; as related by *Tully* in an Oration for *Milo*. And *Florentinus, leg. 3. de Instit. & Jure*, says, that such a Law makes Part of the Law of Nations. But he who infers hence, that at present one can defend his Property, by the Death of those who attempt to rob him of it, is mistaken, for that is entirely forbidden. And in the very same Institutions of the Roman Law, *lib. 4. tit. 3. paragraph 2.* when it is said, *That he who shall kill a Thief in the Attempt, shall not lay under an Action of Injuries*, these Words are added, *provided he cannot avoid the Danger otherwise.* Even by the Law of Christ it is not allowed to have a premeditated Design to kill our Enemy in our own Defence.—At present let's return to the Narrative of the Laws of the *Jews*.

If a Man debauch a Maid, that is not betrothed, he shall surely endow her to be his Wife. If her Father refuses to give her unto him, the Ravisher shall pay her Dowry.

Whosoever lies with a Beast shall surely be put to Death. He that sacrifices to Idols shall perish. Not to afflict any Widow or fatherless Child. Not to sue a Debtor who is poor, nor oppress him by Usury. Not to receive the Raiment of the Poor for a Pledge.

Not curse the Prince of the People.

Offer all the First-born to God.

Bring back the Flock of one's Enemy, if met going astray; and help his Ass if fallen under her Burthen.

Not kill the Innocent and Just, nor take Gifts, for the Gift blinds the Wise, and perverts the Words of the Righteous, &c.

Besides these moral and judicial Precepts of the old Law, there were also ceremonial, which were all entirely abrogated, together with the Law, itself at Christ's Death, when the new Law, or the Law of the Gospel was put in Force.

With Regard to this new Law we'll ask, *what it is, and how many Precepts it has?*

I answer, 1. That the new Law, or the Law of the Gospel, is defined a *divine positive Law*, given to all Men by their Legislator Christ.

It is called *Law*, because the Definition of Law is proper to it.

It is called *positive*, to distinguish it from the eternal and natural Law.

It is said *given to all Men*, to distinguish it from the old Law given only to Abraham and his Posterity.

It is said by Christ, because Christ himself calls his Precepts in several Places of the Scripture, the Precepts of the new Law.

I answer, 2. That there are three Sorts of Precepts of the new Law, viz. *moral Precepts*, the *Precepts of Faith*, and the *Precepts of the Sacraments*; which can be proved by the Scripture. For *Matt. v. vi.* Christ explains the moral Precepts of the Decalogue. And *Matt. ix.* forbids Divorce, and the Libel of Repudiation, and decrees that the conjugal Knot should be indissoluble.

As to the *Precepts of the Sacraments*, it is said, *John iii.* Except a Man be born of Water and of the Spirit he cannot enter into the Kingdom of God. And *John vi.* Except you eat the Flesh of the Son of Man, and drink his Blood, you have no Life in you.

As to the *Precept of Faith* it is said *Mark xvi.* But he that believes not shall be damned.

Note, That there is this Difference between these three Kinds of Precepts; that the moral Ones being of the natural Law, were not instituted by Christ, but only explained, and vindicated from the Errors they had been involved in by Men's Malice. But that the sacramental were instituted by Christ, to supply the Place of the old Ones abrogated by him. That the Precepts of Faith were not instituted anew, but only from implicit were made more clear; so that we are obliged at present to believe some Precepts explicitly, which, in the old Law they believed only implicitly; such as the Nativity, Passion, and Death of Christ, and all the other Mysteries, which are only believed obscurely by the Jews, and are at present believed expressly by the Christians.

Note, also, That the *human Law*, next to the divine, is to fall under our Consideration.

Note, again, That if we had always been govern'd by our Reason, and it had never been disturbed by our Passions, we should not have wanted human Laws to inflict Punishments against Delinquents, and the Refractories to divine and natural Law; all Attentives to our respective Duties, adhering to Good, and averse to Evil, observing a certain Equity towards ourselves, and a Benevolency towards others, we should be actuated by no other Motive than that of Love of Virtue and good Order. But Men's Minds, agitated by various Affections, and darkned by Errors, deviate from the right Way of Reason and Simplicity, to follow the most intricate and oblique Passes. Extravagantly infatuated with their own pretended Merit, they behave themselves towards others with Haughtiness and Injustice, envying their Fortune, jealous of their Merit, and great and noble Actions, rejoicing at their Adversities, perfidious, Calumniators, Plunderers, false, always ready to offend them, and almost never to do them good. Therefore *human Laws* were necessary, which establishing Punishments should maintain the natural and divine Law, correct the Delinquents, keep Rebels in Awe, and contain all in their Duties; for if there was no Fear of Punishment, the most sacred and wholesome Laws are neglected by the Indolent, infringed by the Wicked, and despised by the Audacious.

—Sic omnia satis
In pejus ruere, ac retro sublapsa referri.

*Non aliter, quam qui adverso vix flumine lumbum
Remigiis subigit, si brachia fortè remisit,
Atque illum in præceptis prono rapit alveus amne.*

Therefore the human Laws are established by those who have Power to do it, to give a greater Authority to the natural Law, that no Body should either omit it, or violate unpunished.

There are two Sorts of human Laws, viz. the ecclesiastical and the civil.

The *ecclesiastical Law*, is that established by ecclesiastical Legislators. The Power of making Laws has been granted to the Church, viz. to the sacred Councils, and to the Bishops who are the Successors of the Apostles, whom every Faithful is obliged to obey, according to Christ's Command, who speaks thus to the Apostles; *Luke x. 16.* He that hears you hears me, and he that despises you despises me. Therefore the Apostle St. Paul being at Miletum, assembled all the Prelates of the Church of Ephesus, to whom he spoke thus, *Acts xx. 28.* Take Heed therefore unto yourselves, and to all the Flock, over which the Holy Ghost hath made you Overseers, to feed the Church of God, which he has purchased with his own Blood. But this Authority would be vain, if what can contribute towards the Edification of the Church, and has been established with the Consent, and received by the Generality of the Faithful, was transgressed by some without Fear of Punishment. Hence the same Apostle St. Paul says, *1 Cor. iv. 21.* What will ye? shall I come unto you with a Rod, or in Love, and in the Spirit of Meekness? And he confirmed it in the Name of Christ, by the Excommunication of the incestuous Corinthian, in the following Chapter, ver. 3. For I verily as absent in Body, but present in Spirit, have judged already, as though I were present, concerning him that has done this Deed; in the Name of our Lord Jesus Christ, when ye are gathered together, and my Spirit with the Power of our Lord Jesus Christ, to deliver such an one unto Satan, for the Destruction of the Flesh, that the Spirit may be saved in the Day of the Lord Jesus. He afterwards forgave the same Man repenting of his Sin, *2 Cor. ii. 10.* in these Words; To whom ye forgive any Thing, I forgive also; for if I forgave any Thing, to whom I forgave it, for your Sake, I forgave it in the Person of Christ, i. e. in the Name, and the Authority of Christ, whose Person I represent, and who said to his Apostles, *Matt. xviii. 18.* Verily I say unto you, whatsoever you shall bind on Earth, shall be bound in Heaven; and whatsoever ye shall loose on Earth, shall be loosed in Heaven. I confess, that the Punishment was inflicted by the Apostle on the Incestuous, for his having sinned against the divine, not the human Law; but it is certain that several Things are decreed by the Apostles, which were contained neither in the natural, nor the divine Law. For in the first Council, viz. that of Jerusalem, *Acts xv.* a Law was made, that the Gentiles converted to the Christian Faith, should abstain from Blood, and from Flesh suffocated, which was not commanded by the divine Law. And that Law remained in Force in the Church, as long as the Reasons which had engaged the Apostles to make it, subsisted, according to St. Augustin, *lib. 32. cont. Faust. c. 13.* Likewise St. Paul, *1 Tim. iii. 2.* forbids that the Bigames should be promoted to Episcopacy; which notwithstanding is not found written in the divine Law. And by their Example several Things have been established in the Church, by what we call the Canons of the Apostles, by the Councils, and by the Constitutions of the Popes, which are not at all mentioned in the divine Law.

But however we must make a very great Difference between the Things which have been defined relating to Faith, and those which regard the Discipline only. For the Sanctions of the first Kind, whereby no new Articles of Faith are made, but only those which God has revealed as pertaining to Faith, are declared, are not subject to Change or Mutation, or are irreformable, as Tertullian speaks, *lib. de virgin. veland. c. 1.* But the Decrees of the last Kind, the first Causes thereof failing, and new ones happening, are subject to Reformation.

As the *ecclesiastical Laws* are taken, Part from the Scripture, Part from the Councils, Part from the Writings of the Fathers, and Part from the Constitutions of the Popes; Latin and Greek Authors have given at different

different Times, several different Collections of them, before the Compilation of the canonical Laws, in *French* called *Droit canon*, and in Latin *canonicum jus*; such as it is received in the *Roman Church*, contained in three Volumes, and in six Collections.

The first Volume contains a Collection of the antient Canons, and consequently the old ecclesiastical Law, *Jus antiquum*, which was in Force in the Church for the Space of eleven Centuries. This Collection was called by *Gratian*, the Author thereof, *Concordantia Discordantium Canonum*, having applied himself, not only to collect the sacred Canons, but likewise by means of a scholastical Learning, in which he was very well versed, to reconcile those between which there was a seeming Contradiction. This Collection is, notwithstanding its first Appellation, commonly called *Decretum Gratiani*, the Decree of *Gratian*, i. e. a Compilation of the Church's Decrees made by *Gratian* towards the Year 1151, under Pope *Eugenius III.* *Gratian* was a *Genoese*, and by Profession a *Benedictine Monk*.

This Decree of *Gratian* is divided into three Parts. The first Part contains a hundred and one Distinctions, and each Distinction has its particular Canons. In the first twenty Distinctions it is treated of the Law itself, and of the different Sorts of Law, and of the natural and positive Law, of the divine and human Law, of the civil and ecclesiastical Law, of the Parts whence the ecclesiastical Law arises, *viz.* the Canons of the Councils, the Sentiments of the Fathers, and the Decrees of the Popes. In the following Distinctions is explained all that regards the Ecclesiasticks; where it is treated of those who are admitted into the Clergy, into the Orders, and into the Dignities of the Church; of the Primacy of the Church of *Rome*, and of the respective Rank of all the other patriarchal Churches; of the Ordinations of Clerks, and of the Impediments of Ordinations, of the Virtues proper to the Clergy, of the Vices they are to abhor, and lastly of the universal Hierarchy, and of the different Degrees of the ecclesiastical Jurisdiction.

The second Part of the Decree contains thirty-six Causes; thus called because they are proposed as so many Suits of Law to be pleaded and judged. Each Cause is divided into Questions and Canons. In the thirtieth Cause, *quest. 3.* is concluded a Treatise of *Penitence*, contained in seven Distinctions. Therefore all this second Part of the Decree is of the ecclesiastical Judges, who should be all very well versed in the Science of Morality, since they are obliged by their Office to resolve all the most intricate Doubts, and difficult Questions proposed to them on that Subject.

The first Cause containing seven Questions, treats of *Simony*, the greatest of all the Crimes an Ecclesiastick can be guilty of, whereby, by the Example of *Simon Magus*, *Acts viii. 18.* something spiritual, or annexed to the spiritual, is bought or sold. The following Causes, as far as the sixteenth, treats of criminal Judgments, *viz.* of Accusations, Witnesses, of the Manner of judging Bishops, of the Jurisdiction of Bishops over their Clerks, of the Defects of Ordination, of the Clerks Goods and Estates, of the Tithes, of Funerals, of Usury, &c.

Afterwards *Gratian* passes to the Monks, from the sixteenth Cause to the twenty-first, where he treats of the Right of Patronage, of the State of the Monks and Monasteries, &c. The twenty-first Cause is of the Life and Honesty of Clerks; the rest of the Causes treats of the Crimes which are common between Ecclesiasticks and Laicks. Therefore the twenty-second Cause is of the Crime of Falshood and Perjury; the twenty-third of Homicide and War; the twenty-fourth of Heresy; the twenty-fifth of not violating the Privileges of the Church; the twenty-sixth of Sacrilege. Lastly, from the twenty-seventh Cause to the End, he treats of Judgments, of Matrimony, interting, as we have observed already, in the thirty-third Cause, *quest. 3.* a Treatise of Penitence divided into seven Distinctions.

The third Part of the Decree is called *of the Consecration*, and has seven Distinctions, the first whereof is of the Consecration of Churches, and of the Celebration of Masses; the second of the Eucharist; the third of the Feasts celebrated throughout the whole Year; the fourth of Baptism; the fifth of the Confirmation and Fast.

The second Volume of the *Canon Law*, contains five

Books of Decretals of Pope *Gregory IX.* or a Collection of Epistles whereby something is decreed, particularly of those written from the Year 1150 to 1230, with an Addition of the Decrees of the Councils, particularly of the second and third General of *Lateran*; and likewise of some Sentiments of the Fathers omitted by *Gratian*. This Collection was digested by *Raymond de Pennafort*, of the Order of the Dominican, Chaplain, and Penitentiary to Pope *Gregory IX.*

There was then five Collections of Decretals, called the *antient Decretals*; the first four whereof were of *Antony Augustin*, and the fifth of *Innocent Ciron*. Of these five Collections, and some Epistles of *Gregory IX.* was formed the *Gregorian Compilation*; in which the Compiler *Raymond* has not related the antient Decretals at length, but has curtailed several of them.

The Order observed in the Decretals of *Gregory IX.* is this: The first Book containing 43 Titles, having began by the Doctrine of the Trinity, and the Exposition of several Sorts of Laws, he treats of the Judges, or Prelates of the Church, of the Ecclesiasticks, and of their Ordination. The Second, containing 30 Titles, treats of pleading all Causes in general, and of the judicial Order to be observed in Civil Matters. The Third, composed of 50 Titles, is of the ecclesiastical Affairs. The Fourth, containing 21 Titles, treats of Matrimony; and in it are included the ecclesiastical Causes of the Laicks, which are to be pleaded at a Bishop's Court. Lastly, the Fifth, containing 41 Titles, consists in the criminal Judgments, in the ecclesiastical Censures, &c. which is all expressed in the following Verse:

Judex, judicium, clerus, sponsalia, crimen.

The third Volume of the *ecclesiastical Law*, includes the four remaining Collections, *viz.* the sixth Book of Decretals, the *Clementines*, the *Extravagantes of John XXII.* and the common *Extravagantes*.

The sixth Book of Decretals, which had been compiled, particularly by *William Archbishop of Embrun*, and by several other learned Men, was published by *Boniface VIII.* in the Year 1298. it is called the *sixth*, because added to the five of *Gregory IX.* It contains the Epistles written by *Gregory IX.* after his Compilation, of the following Popes, and of *Boniface* himself; besides the Decrees of the two general Councils of *Lyons*. This Book is divided into five smaller, in the same Order, and with the same Titles, observed in the *Gregorian Collection*.

Clement V. a *Frenchman*, born in *Aquitaine*, composed the fourth Collection, of his own Epistles, and of the Decrees of the Council of *Vienne*, celebrated in the Year 1311; which, notwithstanding, not himself, but *John XXII.* also born in *Aquitaine*, published under the Title of *Clementines*.

The fifth Collection, contains the *Extravagantes* of the same *John XXII.* to the Number of twenty.

The sixth and last Collection, includes the common *Extravagantes* of other Popes: Those decretal Epistles of *John XXII.* and of other Popes, are called *Extravagantes*, because they are not included in the Body of the canonical Law.

To all these may be added the four Books of Institutions of the canonical Law, written by *John Paul Lancelot*; which are of no publick Authority, no more than all the rest.

Note, That all these Collections, or Compilations of the *canonical Law*, are of no Force in *France*, no further than they are agreeable to the Liberties and Customs of the *Gallican Church*.

Likewise new Briefs, Bulls, &c. of the *Roman See*, can be of no Force in the Kingdom, but when they are introduced by the King's Edict, examined and approved by the Parliament of *Paris*, and received by the Clergy of *France*.

The *Gallican Church* has also ecclesiastical Laws proper to herself, composed of the antient Institutes of the universal Church; of the *Pragmatick Sanction*, promulgated by the Most Christian King *Charles VII.* in the Year 1438; and of the *Concordats*, between *Leo X.* and *Francis I.* King of *France*, in the Year 1515.

The *Germans* have, likewise, their *Concordats*, concluded

cluded between *Nicholas V. Pope*, and the Emperor *Frederick III.* in the Year 1447.

In *England*, since the Reformation, the *canon Law* has been much abridged and restrained; only so much of it obtaining, as is consistent with the Common and Statute Laws of the Realm, and the Doctrine of the established Church.

Besides those Laws or canonical Constitutions, which compose almost all the written *Canon Law* of the *Roman Church*, there occur in particular Churches some particular Customs, not written; which being not derogatory to the natural Laws, nor contrary to the Maxims of a Christian Life, are to be observed, not only by the Inhabitants of these Places, but likewise by Foreigners. Therefore Custom is to be observed as a Law, as far as it is not contrary to Truth and Equity.

Note, That from the canon Law I'll pass to the Civil.

The *CIVIL LAW*, is that made by a civil Legislator, viz. either a Prince or a Republick, and which all the Subjects of that Prince or Republick are obliged to obey. For good Order cannot suffer that the Inferiors should not obey their Superiors in Things calculated for the publick Good.

Therefore those who command others, have a Right to call to an Account those who despise their Laws; which is confirmed by the Apostle, *Rom. xiii. 1. Let every one be obedient to the superior Power; for there is no Power but from God: Therefore he who resists Power, resists God's Ordinance.* And to shew the Enormity of the Crime of those who resist a legitimate Authority, in Things which are not contrary to Reason, the publick Good, &c. He adds, *and those who resist acquire their Damnation.*

From which Expressions it is easy to understand, that the *Civil Law* is political, and temporal with Regard to the Object and the Things commanded; but that the Obligation arising from it, is internal and spiritual; and that the Observance thereof cannot be despised with a safe Conscience; but every one, either Clerk, Foreigner, or Stranger, is under the Direction of those Laws: Likewise a Traveller, while he stays in a Place, makes Part, at least a transitory and temporary one of the Society of those among whom he lives; and consequently must submit himself to the Laws, Customs, and Usages of the Place, as far as it is not repugnant to the natural or divine Law. Whence this Proverb,

Dum fueris Romæ, Romano vivito more.

For there has been no Nation nor People ever so great Barbarians, which had not their own particular Laws.

First, we have seen the civil Precepts which God himself had dictated to the *Jews*. Then we know that the most antient People, and particularly among the *Greeks*, have digested and reduced into Writings their Civil Laws, such were those of *Solon*, *Licurgus*, and others, which all flow from the natural Law; and perhaps are taken in part from the Law of *Moses*. But the *Romans* have excelled in that all other Nations. For they have not only encouraged and cultivated the Art of conquering other Nations, but likewise of governing them by just and wholesome Laws, which *Virgil* insinuates, *lib. 6. Æneid.* in these elegant Verses.

Excudent alii spirantia mollius æra:

Tu regere imperio populos Romane memento.

Therefore besides the Laws of *Romulus*, and of the other Kings, which were in Force while the Royal Authority lasted; they took Care, after the Expulsion of the King, to make Laws agreeable to the republican Government they had established among them, to keep the Citizens under a just and reasonable Subjection, to compose their Differences, &c. To that Effect, they sent about the Year 300 of the Foundation of *Rome*, three Deputies to *Athens*, and to the other Cities of *Greece*, to collect the Laws of those People, and bring them to *Rome*. These being return'd three Years afterwards, were joined to them, to make a Choice of those Laws, and who digested them into ten Tables, to which soon after, by reason that some of those Laws were defective, were added two more Tables: So that those twelve Ta-

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bles became afterwards the Source of all the private and publick Laws. Those Compilers were called *Decemviri*; whence the Laws of the twelve Tables were also called *decemviral Laws*.

It is great Pity this System of Laws should have perished, through the Injuries of Time; we have now nothing of it but a few Fragments dispersed in divers Authors. *J. Gothofred* has collected them together, and we have them in *Resinus*, and some other Authors. The *Latin* is very old and barbarous, and remarkably obscure.

Next to these Tables were what was properly called *Laws*, which were Ordinances of the whole Body politic: The *Plebiscita*, made by the *Plebeians*; the *Senatusconsulta*, by the Senate. Then next were the *Edicts* of the Pretors, whence proceeded a Right called the *honorary Right*. These Edicts having been collected into one Body, that Body was called the *perpetual Edict*.

The Face of the Republick being changed, and the Empire deferred to one Person only; there ensued several Constitutions of the Emperors, which during very near 500 Years, i. e. from *Augustus* to *Justinian*, increased in a surprizing Manner.

Of these Constitutions of the Emperors, from *Adrian* to *Constantine*, were composed two Codex's, in the Time of *Dioclesian*, one by *Gregory*, and the other by *Hermogenes*, both private Persons. The Emperor *Theodosius* the Younger, gave the third Codex, digested by eight prudent Persons, in which he included the Constitutions of the Emperors, from *Constantine* to himself.

At last the Emperor *Justinian* perfected quite the *Roman Jurisprudence*. For in the Year of Christ 528, he appointed some illustrious Persons to free the *Gregorian*, *Hermogenian*, and *Theodosian* Codex's of their too tedious Prolixity, and to compose of them another under the Name of *Justinian*. Agreeable to the Emperor's Expectations they perfected the *Justinian* Codex, which he approved and confirmed by an imperial Constitution, given in the Year 529.

Afterwards, he caused to be comprised into a single Work, all the antient Laws divided into fifty Books, which Work was called the *Digest*, or *Pandects*.

Then he published an Epitome of the *Civil Law*, distributed into four Books, for the Use of young Students in the Law, and which he called, *The Epitome of the Institutions of the Civil Law*.

But as he found that several Things were omitted in the Codex, or not treated with that Accuracy he desir'd, he caused it to be corrected in several Places, and would afterwards give a second Edition thereof more correct than the first, and this is, *Repetitæ prælectionis codex*; which we read in the Body of the Civil Law.

The *Novellæ* were soon added to it, or 168 new Constitutions. So that the whole Body of the Civil Law consists of four Collections, viz. the four Books of *Institutions*, fifty Books of *Digests* or *Pandects*, twelve Books of the Codex, and 186 Novels. From which Novels were extracted short Sentences, which in the Division of the Codex, were inserted in several Places thereof, and are called *Authenticæ*, because confirmed by the Authority of the Emperor.

But as the fifty Books of *Digests* or *Pandects*, with the *Glossa*, could not be contained in one Volume, Booksellers have divided them into three, calling the first Volume the *antient Digest*; because it was published first, the second *Infortiate*, because it gives a clearer, and more ample Knowledge of the Law; and the third the *new Digest*, because published last.

Each Book of the *Pandects* and *Codex* is divided into Titles, and the Titles into Laws, and the Laws into Paragraphs. Therefore when some Law of the *Digests* or *Pandects* is quoted, the Name of the Digest is signified by the majuscule Letter D. And of the *Pandects*, by a Greek π with a Circumflex, in Place whereof the Printers substitute a double ff. For Example, if any Body wants to quote the third Paragraph of the first Law of the first Title of the *Digests* or *Pandects*, which has for Title *de Justitiâ & Jure*, he'll say, the *natural Right is what Nature has taught all Animals*, from *lib. 1. paragra. 3. D. or ff. de Justitiâ & Jure*, i. e. the first Law, third Paragraph of the *Digest* or *Pandect*, Title *de Justitiâ & Jure*.

And in the Codex, *L. nemo 2. cod. de Sacrosanct. Ec.*
4 C
i. e.

i. e. the Law which begins at this Word *nemo*, which is the second Law in the Codex, Title *de Sacrosanctis ecclesiis*. This Title is the second of the first Book. If the *Authentica* is quoted, it must be said, *Authen. cassa, cod. de Sacrosanctis Ecclesiis*, &c. The *Novels* are quoted by their proper Names, and the Chapters thereof are indicated. The Institutions of the Civil Law are commonly quoted by Paragraphs and Titles.

Though the *Roman Civil Law* was composed with so much Art and Care by *Justinian's* Order, as well of the Answers and Observations of the most learned Lawyers, as of the Constitutions of the Emperors, it notwithstanding was not presently approved by the succeeding Emperors, nor pleaded at the Bar. But its Authority increased by Degrees, as it began to be more known among Mankind. And at last began to be observed by almost all Nations, either in the whole or in Part. At present it is of a great Authority in almost all *Europe*, where it is simply called *Law*.

For though there be scarce any Kingdom or Province in *Europe* which has not its particular Use and Customs; in them notwithstanding the *written Law*, i. e. the *Roman Law*, is a Rule whenever the customary, or common Law is deficient. Which is rightly observed by *Obertus de Orto*, a Lawyer of *Milan*, lib. 2. *de Feudis*. Tit. 1. in these Words, *An experienced Lawyer, if a Case arises, which is not contained in the common Law, can very well have Recourse to the written Law.*

In *France*, there are some Provinces where the *written Law* is in Force, as in *Lionnois*, *Provence*, &c. and others follow their antient Customs, as *Britanny*, *Normandy*, &c. which, notwithstanding by the Constitutions of *Charles VII. Anno. 1454.* must be put in Writing, and approved by the superior Courts; to take off all Occasion of Variation, which arose from the Diversity of Opinions; and the Judges should be more certain of what they were to follow in their Judgments. Almost every where, notwithstanding, the *Roman Law*, is considered as a certain common Rule; for it contains the true and genuine Principles of natural Equity and Justice; and we cannot find any where else better Precepts and Definitions of the Jurisprudence: Therefore it will not be improper to give here a Kind of Abridgment of the Institutions of *Justinian*, since those Institutions are like the Elements of the *Roman Jurisprudence*, which our Pupil, Jurisconsulte or Lawyer, should learn first, if he designs to become a learned one; and not be contented with rendering himself perfect, only in the Quirks of the *Law*, which but too often renders odious and very oppressive, one of the most honourable Professions of the Civil Society.

The *Institutions of Justinian* are divided into four Books, each whereof contains various Titles, each Title being besides divided into *Beginning* and *Paragraphs*.

From the FIRST BOOK.

The *First Book*, having given the Definition of Justice and Jurisprudence, and exposed the different Kinds of Laws, treats of Persons, of which it reckons several Divisions.

TITLE I. Of Justice and Law.

Justice, is a constant and perpetual Will of giving every one his own.

It is said, a constant and perpetual Will, to indicate thereby the Habit of the Will, for a constant and perpetual Will is not without Habit. It is added, to give every Body his own, because the Object of Justice is to give every Body his own.

Jurisprudence is the Art or Science of the Law; in which Sense it is defined the *Art of Good and Just*.

Law, is either publick or particular. That *Law* is called publick, which relates to the State of a Republick or Kingdom; as the sacred Law, the Law of War and Peace. Among the *French* the *Salic Law*, which excludes the Females from the Throne. Likewise in *Germany* those *Laws* which relate to the Election of an Emperor, are publick Laws, &c.

Those are called particular Laws, which have for Object the Utility of every Individual; and of these only *Justinian* treats, and which he says he has collected

from the natural and Civil Laws, and from the Laws of Nations.

TITLE II. Of the Natural and Civil Laws, of that of Nations.

Natural Law is defined in this Title, a Law which Nature has taught all Animals: Or which is common to Men and Beasts; though Beasts are justly considered deprived both of Reason and of Law; but when Beasts do by a natural Instinct what Men do by Reason, they are said to do it by the *natural Law*. In Proof thereof we bring the Copulation of the Male and Female, the bringing up their Progeny, &c.

The *Law of Nations*, is that used by human Creatures, according to *Ulpianus*, leg. 1. ff. *de Just. & Jure*. and this is either primary or secondary.

That is called *primary*, which natural Reason has established among Men; to which belongs Religion, the Love for our Country, and Parents, &c. And this *Law* is in fact the *natural Law*, because it properly belongs to no other but rational Creatures: And it is thus called by the Emperor *Justinian*, lib. 2. *instit. titul. 1. parag. 11.*

The *secondary*, is that which has been established according to the Exigency of human Affairs; and whereby almost all Contracts have been introduced in the Civil Society, as *Emption*, *Vendition*, *Location*, *Conduction*, *Society*, *Depositum*, *Mutuum*, and an almost infinite Number of others.

The *Civil Law*, is that which a free People have established for themselves. And this is either written or not written, or *customary*; though the customary Law is at present written in most Parts of *Europe*, particularly in *France* and *England*.

TITLE III. Of the Right of Persons.

Justinian begins in this Title, to treat of Persons; and says the first Division of Persons to be this, that all Men are either free or Slaves.

Liberty, taken for the State or Condition of Man, as it is taken here, is the natural Faculty every one has to do what he pleases, unless he be hindered from it either by Violence, or by Law, from l. 4. ff. *de Stat. homin.*

It is said, a natural Faculty, because all Men are born free; but *Servitude* has been introduced by the Law of Nations; for after War was introduced among them, Captivity or Servitude followed soon, which was countenanced by the Civil Law, and thereby it happened, that some were brought under the Sovereignty of others, who obtained a Power of Life and Death over them, against Nature, and the primary *natural Law*.

It is said, whereby one does what he pleases; for the Effect of Liberty is to do what one will. Hence this Sort of Liberty is defined by *Cicero*, *pared. 5. The Power of living as one wills.* The same *Tully*, lib. 1. *de off.* says, that the Property of Liberty is to live as you will.

It is added, unless hindered from it by Violence and Law. For a Man free can be hindered by these two Things, Violence and Law, from doing what he pleases; though thereby he is not made a Slave, but still remains free. Which *Servius* insinuates against the 28th Verse, of the first Eclogue of *Virgil*, in these Words, *Otherwise a Slave says, I desire my Liberty, and otherwise an Ingenuus* (i. e. he who is free as soon as he is born,) *for the first desires to be delivered from his Servitude, and the last will have his Liberty to act as he pleases.*

Therefore a Man free is sometimes hindered from doing what he pleases though he remains free. As a Man tied Neck and Heels by Thieves, does not become a Slave, though he cannot do what he pleases. Much less do we lose our natural Liberty, when forbidden by the Law to do certain Things. For as *Cicero* says, *Orat. pro cluent. We are thereby made Slaves of the Law that we may become free.*

Servitude is defined, leg. 4. lib. 4. ff. *de Stat. hom. A Constitution of the Law of Nations, whereby one is brought under a foreign Power against Nature.* It is said, a Constitution of the Law of Nations, and likewise of the Civil Law; because Slaves, among the *Romans*, were either born so or made such. They were born of Servants; but were made by the Law of Nations, viz. by Captivity; or by the Civil Law, when a Man above twenty Years

of Age suffered himself to be sold for a certain Price.

Slaves were thus denominated from that the Emperors used to sell or keep their Captives, and not kill them; whence they were also called *Mancipii*, because they were taken by the Enemies, and not killed.

There was no Difference in the Condition of Slaves; but the Free were either *Ingenui*, or *Libertini*.

An *Ingenuus*, was he, who was free as soon as he was born; or was born of a Mother which was free; for, in that Case, the Child followed the Condition of his Mother.

A *Libertus*, was a Slave set free by *Manumission*; which *Manumission* was an Act whereby a Slave was set at Liberty, or out of Bondage; which was effected in several Manners, some more solemn than the others.

The solemn Manners were three, *viz.* the *Vindicta*, *Census*, and *Testament*.—The *Vindicta* was when the Slave was led before the Pretor, and that Magistrate laid his Wand, called *Vindicta*, on his Head; thus called *Vindicta*, from one *Vindicus* a Slave, who having discovered a Conjururation of some young Noblemen against the Republick, was made free, and a Roman Citizen.—The *Census* was when, with his Master's Consent, a Slave had his Name entered in the *Census*, or publick Register of the Citizens; to which succeeded the *Manumission* made, in the Church, on Christian Slaves, before the Assembly of the Faithful; till Slavery was entirely abrogated among Christians.—Lastly, the *Manumission* by *Testament*, was when the Master gave the Slave his Freedom by his Testament.

It was not necessary, that the Pretor should be on his Tribunal to perform the Ceremony of *Manumission*: He did it any where indifferently, in his House, in the Street, going to bathe, &c. he laid the Rod on the Slave's Head, pronouncing these Words, *Dico eum Liberum esse more Quiritum*: I declare him a Freeman after the Manner of the Romans. This done, he gave the Rod to the Lictor, who struck the Slave with it on the Head; and afterwards with his Fist on his Face and Back: And the Notary, or Scribe, entered the Name of the new Freedman in the Register, with the Reasons of his *Manumission*.

The less solemn Manners of *Manumission* were also three; *viz.* among Friends, when a Master manumitted his Slave in the Presence of his Friends.—By the Table, *per Mensam*, when a Master admitted his Slave to his Table.—By Epistle, *per Epistolam*, where a Master granted by Letters to his Slave, that he should live free.

There were three different Conditions of *Liberti*, or *Manumitted*. For some of them were made Roman Citizens, and enjoyed all the Rights and Privileges of the City of Rome; as the Right of Marriage, the Right of making a Testament, and the Right *Patriæ Potestatis*, &c. Others were called *Latini Juniani*, because of the Law *Junia Norbana*, made by M. Julius Silanus, and L. Norbanus Coss. they enjoyed the same Right the Latins enjoyed before the War of Italy, to whom the *Jus Latii* had been granted, whereby they traded with the Romans, but did not enjoy the Rights or Privileges of the City, but were considered as Strangers. Others were *Deditii*, whose Condition was worse, as being semblable to those People, who having promised Fidelity to the Republick, revolted afterwards from it, and returned to it again, to enjoy an imaginary Liberty. Justinian abolished entirely those different Classes of *Libertini*; as is evident from Tit. 5. of this Book.

TITLE VIII. Of those who are of their own, or of another's Right.

The second Division of Persons is into those, who are of their own Right, and are called *Patres-Familias*, whether arrived at the Age of Puberty or not; and into those who are of another's Right; whether they be under the Authority of a Master, as Slaves abovemention'd, or under the paternal Jurisdiction, as Children.

TITLE IX. Of the paternal Power or Jurisdiction.

Paternal Power, is a Right, which, by the Roman Law, a Father has on his Children, whether born of a lawful Marriage, or legitimated, or adopted. Every Body knows what Children, born of a lawful Marriage, are: If they be born of a Concubinage, they are called

natural, not legitimate, because not acknowledged by the Laws; but they can be legitimated by a subsequent Matrimony: And those who were called *adoptive*, among the Romans, who were not Children by Nature, but only by Adoption.—There are two Sorts of Adoption; one was called *Adrogation*, whereby a Person who was his own Master, was taken by another into the Relation of a Son: The other, whereby a Son who was not his own Master, passed under the Jurisdiction of an adoptive Father: This Adoption was made before the Pretor, and the first at an Assembly of the People, in the Times of the Common-wealth, and afterwards by a Rescript of the Emperor.

Great was the Authority of the Father over his Children, by the Law of the twelve Tables: Therefore Justinian says, in this Place, *that none have so great an Authority over their Children, as the Roman Citizens had*. For the Law of the twelve Tables is this: *Let the Authority of Fathers over their Children be a supreme one: let them have the Liberty to sell or kill them. If a Father sells thrice his Son, let the Son be free from his Father*.

Hence it happened, that, in the old Roman Law, the Emancipation of Children, was made by three imaginary Venditions, and as many Manumissions; which was not done without some Formalities: For the Father, accompanied by a Friend, called *Fiduciarius Pater*, Father in Trust, brought his Son before the Pretor; whom he sold to the *Pater Fiduciarius*, being confident that his Son would recover his former Liberty: Therefore the Father in Trust, in the Presence of five Witnesses, bought the Son from his natural Father, giving him for Form-sake, one or two Crowns, and thus the same came under his Jurisdiction, who presently manumitted him. Being manumitted, and falling again in the Power of his natural Father, he was sold a second Time, and manumitted again by the *Fiduciarius*; which Ceremony was repeated for the third Time; so that after the third Mancipation, and Manumission, the Son became entirely his own Master.

But these Formalities were afterwards abolished; to which succeeded, 1. The *Anastasian Emancipation*, made by a Rescript from the Prince, as ordered by the Emperor *Anastasius*, leg. 5. *cod. de Emancip.* and afterwards the *Justinian Emancipation*, made before a Magistrate, as decreed by *Justinian*, leg. 6. *cod. eadem Tit.*

From this it is understood, that Emancipation, in the Roman Law, was an Act, whereby a Father gave up the Power and Authority he had over his Son, though yet under the Age of Puberty, and wanting a Tutor.

Among the French, *Emancipation* is an Act whereby a Minor, who has lost either his Father or Mother, or both, with the Advice of his near Relations, and by the Prince's Authority known to the Judges, is freed from the Jurisdiction of a Tutor, and enjoy the *Usufruit* of his Revenues, under the Authority of a Curator, till being full 25 Years of Age, he becomes entire Master of all his Possessions.

There were other Manners, besides the Emancipation, whereby in the Roman Law a Son was freed from the Authority of his Father, *viz.* the great Preferments of the Son; the civil Death of the Father or of the Son; or the greatest and middle Diminution of the Chief, not the less.

The Diminution of the Chief, is called the *Mutation of a former State*; of which there are three Sorts, *viz.* the greatest, middle, and less. The less Diminution of the Chief, was only a Change of Family, without Loss of Liberty and of Right of *Burgoisie*, as it happen'd to adoptive Sons, who passed into another Family. The middle Diminution of the Chief was the Loss of the Right of a Citizen, and consequently of a Family, but not of Liberty, as it happen'd to those who were transported for Malversation.

The greatest Diminution of the Chief, was the Loss of Liberty, and consequently of the Right of a Citizen, and of one's Family, as it happen'd to those who being above 20 Years of Age, suffer'd themselves to be sold, to have Part of the Price; or who became *Servi-pene*, i. e. who were condemned to the Mines, or exposed to the Beasts, for their Crime.

But however, the paternal Jurisdiction, was rather suspended than taken away by Captivity, because of the Right

Right of *Postliminy*. For when a Father return'd to the *Postliminy*, he was imagined to have been always in the City; those who were taken by the Enemies, and being afterwards set at Liberty, returned into the City, were said to have return'd to the *Postliminy*.

Note, That *Postliminium*, *Postliminy*, among the Romans was the Return of one who had gone to sojourn elsewhere, or had been banished, or been taken by the Enemy, to his own Country and State. It was thus called, according to *Aul. Gellius*, from *Post*, after, and *Limen*, Threshold, *q. d.* a Return to the same Bounds or Threshold: Though others, after *Amm. Marcellinus*, will have it so denominated, because Persons were restor'd into the House through a Hole in the Wall, *Post Limen*, not by going over the Threshold, which was esteemed ominous. *Postliminium* was also a Law or Action, whereby one recovered an Inheritance, or other Matter that had been lost, from a Stranger or Enemy.

Note also, That there was this Difference between Transportation and Relagation, that those who were transported, lost their Right of Citizens, and became Strangers, retaining, notwithstanding, these Privileges, which are of the Law of Nations; therefore they could sell, buy, and make all the other Contracts which are of the Laws of Nations, as well as the Roman Citizens. But they had not the Right of making a Testament, of marrying, nor of a paternal Jurisdiction, &c. but the Banished remained still Roman Citizens, and enjoyed all the Privileges of the City. Hence *Ovid* speaks of the Sentence of *Augustus*, whereby he was banished, in the following Terms, *Trist. lib. 2. Eleg. 1.*

*Adde quod editum, quamvis immite minaque :
Attamen in pœne nomine lenè fuit.
Quippe relegatus, non exul dicor in illo :
Parcaque fortune sunt tibi verba meæ.*

TITLE X. Of Nuptials.

Nuptials, or *Marriage*, is the *Conjunction of Man and Woman*, importing an inseparable Custom of Life. That *Conjunction* is rather of the Minds than of the Bodies, for the Consent, not the Cohabitation, makes the Marriage.

In the Roman Civil Law, four Things are required for a legitimate Marriage.

1. That the contracting Parties should be Roman Citizens; for antiently neither Strangers, such were those who had only the Right *Latii*, nor Servants, could contract among them, a legitimate Marriage. But by the Canon Law, all Men, either Citizens, or Strangers, either Free, or Slaves, contract a legitimate Marriage, because God makes no Difference between the Free and the Slave, according to *St. Paul, Gal. iii. 28.*

2. It is required that the Men should be in the Age of Puberty, and the Women capable to bear a Man; or that the Men should be 14 Years of Age accomplished, and the Women 12 accomplished.

3. They must have the Consent of the Parents, in whose Power they are; for civil and natural Reason, persuades that such a Thing is required. In this the Edicts of the Kings of France confirm the Roman civil Law. But the Canon Law does not require that Consent of Parents; as may be seen, *Lancelot, lib. 2. instit. Juris. can. Titul. XI. Paragrap. 1.*

4. It is required that the contracting Parties should abstain from forbidden and nefarious Nuptials, such as those contracted between those join'd by Affinity or Consanguinity.

Consanguinity is the Relation or Kinship, between Persons of the same Blood, or sprung from the same Root.

Affinity is a Relation contracted between one of two Parties married, and the Kindred of the other Party.

There are two Lines of Consanguinity, viz. one Right and the other collateral.

The right Line is that, in which one has begot another; and which is either of the ascending, in which, reckoning from the Son, we ascend to the Father, Grandfather, &c. or of the descending, in which we

descend from the Father to the Son, to the Grandson, to the great Grandson, &c.

The collateral Line, is of those who come side-wise.

In the right Line, v. g. Marriage is prohibited, in infinitum, between the Father and the Daughter, Granddaughter, &c. It is prohibited, likewise, between Persons, some of whom take the Place of Parents, with Respect to others; as no Body is allowed to take for his Wife, his Mother in Law, Grandmother in Law, &c. because they take the Place of Mothers.

In other Persons, who are in the collateral Line, the Degree or Distance of one Person from the other, must be distinguished.

In the civil Law, these Degrees are differently computed, from what they are in the Canon Law.

In the civil Law there are as many Degrees as Generations; reckoning by the Number of Persons issued from the same Stock, each Person sprung therefrom making one Degree; ascending from the Person generated to the common Stock, and descending from the common Stock to the other Person generated. For Example, if *Titius* has begot *Mævius* and *Sempronius*, these two, viz. *Mævius* and *Sempronius*, who are Brothers, are said to be in the second Degree; for *Mævius* is begotten by *Titius* the common Father of both, there's one Degree. *Titius* has begot *Sempronius*, there's another Degree; and for that Reason the Son of *Mævius* and the Daughter of *Sempronius*, are in the fourth Degree; for the Son of *Mævius* is begotten by *Mævius*, there's one Degree; *Mævius* by *Titius*, their common Father, there's the second; then *Titius* has begot *Sempronius*, there's the third; and *Sempronius* has begot his Daughter, there's the fourth.

In the Canon Law the Generations are only reckoned from one Part, descending from the common Father to the Person begotten, or ascending from the Person begotten to the common Stock. Whence Brothers and Sisters, according to the Canon Law, are in the first Degree; the Children of Brothers and Sisters, in the second, &c. therefore in the aforesaid Example, *Titius* begot *Mævius* and *Sempronius*; then *Mævius* had a Son, and *Sempronius* a Daughter. If an Ascent be made from one Part, viz. from the Son of *Mævius* to *Titius* the common Stock, or a Descent from *Titius* to the Son of *Mævius*; or from the other Part to the Daughter of *Sempronius*, there will occur only two Generations, and consequently two Degrees.

Therefore, by the civil Law, the Cousin-Germans, i. e. the Children of Brothers or Sisters, being in the fourth Degree, cannot contract Marriage.

But in the Canon Law, not only Cousin-Germans cannot contract Marriage, but not even Nephews and Nieces; because the Nephews and Nieces of Cousin-Germans, are only in the fourth Degree, according to the Canon Law, by which Law Marriage is forbidden in the collateral Line, as far as to the fourth Degree inclusively, i. e. including the Degree within the Prohibition.

What I have said of Consanguinity, may be said likewise of Affinity; for Example, if *Titius* marry *Arabella*, he cannot, after her Death, marry her Cousin, within the fourth Degree inclusively. Where it must be observed, that though by the civil Law, Affinity be dissolved, by the Death of one of the Parties contracted, as it appears from *Parag. Sacrum. 7. Institut. de nupt.* it, notwithstanding, remains by the Canon Law.

Children born of Fornication, are called natural, or spurious, and not legitimate, because the Laws do not acknowledge them, as already observed; but they are legitimated by a subsequent Marriage.

There are other Persons forbidden to marry by the civil Law, as a Tutor cannot marry his Pupil, while he is her Tutor.

Note, That in England, and in several other Parts, the Woman, with all her moveable Goods, immediately upon Marriage, passes wholly in potestatem viri, into the Power and Disposal of the Husband. In Germany, they have a Kind of Marriage called *Morganatick*, wherein a Man of Quality contracting with a Woman of inferior Rank, he gives her the Left Hand in lieu of the Right, and stipulates in the Contract, that the Wife shall continue in her former Rank.

Rank or Condition, and that the Children born of them shall be of the same, so that they become Bastards as to Matters of Inheritance, though legitimate in Effect; they cannot bear the Name or Arms of the Family.

None but Princes, and great Lords of Germany, are allowed this Kind of Marriage. The Universities of *Leipsick* and *Jena*, have declared against the Validity of such Contracts; maintaining, that they cannot prejudice the Children, especially when the Emperor's Consent intervenes in the Marriage.

The *Turks* have three Kinds of Marriages, and three Sorts of Wives; *legitimate*, *Wives in Kebin*, and *Slaves*. They marry the first, hire the second, and buy the third.

The *Roman Law* speaks of second Marriages in very hard and odious Terms; *Matre jam secundis nuptiis funestata*, lib. 3. c. de secund. nuptiis. By these Laws it was enacted, that the Effects of the Husband or Wife deceased should pass over to the Children, if the Survivor should marry a second Time. By the Law, *Hac editali*, cod. de sec. nup. the Survivor, upon marrying a second Time, could not give the Person he married a Portion more than equal to that of each of the Children. In the primitive Church, the Respect to Chastity was carried so high, that a second Marriage was accounted no other than a lawful Whoredom, or a Species of Bigamy.

Note also, That Marriage, *Maritagium*, in Law, signifies not only the lawful joining of Man and Wife, but also the Right of bestowing a Ward, or a Widow in Marriage; as well as the Land given in Marriage. *Duty of Marriage* is a Term used in some antient Customs, signifying an Obligation on Women to marry. To understand this, it must be observed, that old Maids, and Widows about sixty, who held Fees in Body, or were charged with any personal or military Services, were antiently obliged to marry, to render those Services to the Lord by their Husbands; or to indemnify the Lord, for what they could not do in Person. And this was called *Duty*, or *Service of Marriage*.

TITLE XIII. Of Tutorage or Guardianship.

Persons are said to be their own Masters, or *sui Juris*, which are neither under a paternal Jurisdiction, nor subject to a Master. And these are either under Tutorage, or under Curatorship, or free from either of the three Conditions.

Tutorage, *Tutla*, is defined an Office or Power, given or granted by the Law, to take Care of a Person, yet too young to take Care of himself: It is called an Office or Power in a free Chief, and could be said, likewise, on a free Chief, i. e. the Power in a free Chief to take Care and protect another free Person, who through the Imbecility of his Age cannot defend himself. And in this *Tutorage* differs from Curatorship, that a Tutor is first given to the Person, then to his Effects; but a Curator is only given to the Effects, not to the Person.

It is added, *given and allowed by the civil Law*, because by the *Roman Law* there are three Kinds of Tutorage.

1. *Testamentary*, when, for Example, a Father gives his Children, still Minors, a Tutor, by his Testament.
2. *Legal*, which is given by the Law to the nearest Relation.
3. *Dative*, which is appointed by the Magistrate.

Therefore the *Legal Tutorage* is given or deferred by the Law of the twelve Tables; the *Testamentary* is permitted; and the *Dative* descends from the *Attilian Law*, and others.

But in all customary Provinces, as *France*, &c. all Tutorages are *dative* and *elective*; and though the Father has by Testament nominated the next Relation to his Pupil, yet is not that Nomination of any Force, unless the Choice be confirmed by that of the Magistrate, &c.

By the *Roman Law*, *Tutorage* expires at 14 Years of Age; but in *France*, not till 25 Years. A Minor quits his *Tutorage*; and becomes free by Marriage; in which Case a Curator is given him.

By the Custom of *Normandy*, the Father is the natural Tutor of his Children. A Person nominated Tutor, either by Testament or by the Relations of the Minor, may de-

cline that Office if he has five Children alive; if he has any other considerable *Tutorage*; if he be under 25 Years of Age; if he be a Priest or a Regent in an University; or if he has any Law-Suit with the Minor, and if he be poor or infirm.

The Marriage of a Pupil, without the Consent of his Tutor, is invalid. Tutors may do any Thing for their Pupils, but nothing against them; and the same Laws which put them under a Necessity of preserving the Interest of the Minors, put them under an Incapacity of hurting them.

TITLE XXII. Of Curators.

A Tutor being given to a Person by Reason of the Imbecility of his Age, is never given but to those under the Age of Puberty; therefore when they are arrived at the Age of Puberty, the *Tutorage* ends, by the *Roman Law*; then those who before were called Pupils, and under *Tutorage*, are called Minors; and Curators are given them to take Care of their Affairs and Interests; till they be 25 Years of Age accomplished; at which Time they are declared Majors, and become entire Masters of all that belongs to them.

In *France*, *Tutorage* lasts, till a Minor be 25 Years of Age, unless he obtains, when about eighteen, Letters from the Prince, whereby he is freed from the Authority of a Tutor, or emancipated, and enjoys, under the Authority of a Curator, the *Usufruit* of his Estate.

Sometimes, as well by the *Roman* as the *French Law*, Curators are given by Reason of the Imbecility of the Body, or of the Mind, to Prodigals, and to all others who are incapable of managing their own Affairs.

From the SECOND BOOK.

Note, That hitherto I have treated of Persons, now I must treat of Things.

TITLE I. Of the Division of Things, and of acquiring a Right to them.

All Things are either in the Patrimony, or in the Power of particular Persons; or out of Patrimony.

Those out of the Patrimony of particular Persons, or on which particular Persons have no particular Claim or Right, are all the Things which are in common, all publick Things, the Things of an University, Things belonging to no Body.

Common Things, the Property whereof belongs to no Body, but by the natural Law, and the Law of Nations, can be used by every Body; as the Air, running Water, the Sea, the Sea-shore, wild Beasts, Fishes, &c.

Those Things are called publick, the Property whereof belongs to some particular Nation, but the Use of them is by the Law of Nations, common to every Body, as a River, a Sea-port, &c.

The Things of an University, are those the Property whereof belongs to an University or College, and the Use of them to all those who are of that University or College, as Theatres, Gardens, Baths, &c.

The Things which are of no Body, are the Things of divine Right; which regularly can be made the Property of no Body; and these are either sacred, religious, or holy.

Those Things are called sacred, which are consecrated to God by Bishops, as Churches, Altars, and Vessels dedicated to the divine Service, &c. which, by the Canon Law cannot be alienated, but in Case of an extreme Necessity, or for the Use of the Church, viz. to redeem the Captives, to feed the Poor, &c.

Among the *Romans*, by the civil Law, a religious Thing was a Place where some Body had brought a dead Corpse, either of his proper Will, if it was his own Place, or with the Consent of the Lord of the Place, if it was not his own Property. By the Canon Law a Place is not accounted religious, unless it has been consecrated by a Bishop, or by a Priest appointed by him; of this Kind are the Places, where the Dead are buried.

Holy Things are those, which, by some Sanction, are protected against the Injuries of Men; as the Walls, Gates, and Laws of a City.

In the Patrimony of Particulars, there are Things, the Right whereof is acquired to Particulars.

Right is the Faculty of disposing of a Thing, unless

the Law, or a Convention hinders it.

There are six Manners of acquiring a Right, by the Law of Nations, *viz.* Occupation, Accession, Specification, Confusion, the Perception of Fruits from a foreign Thing.

Occupation, is whereby a Thing becomes the Property of the Person who takes Possession of it first.

To *Occupation* belongs the Acquisition of wild, but not of domestick Beasts; the Acquisition of Things gained in War; Things found, and Things considered as abandoned, or forsaken.

Therefore wild Beasts, Birds and Fishes, as soon as by Hunting, Fowling, and Fishing, they are fallen into the Hands of any Body, they begin to be his; but if any of them escape you, after you have taken them, they are no more yours, but return into the Possession of their former Master: It is asked, if a wild Beast, being wounded as to be easily taken, becomes yours from that Time? To which it is Answer, that it is no more yours than when it escapes after it has been taken.

Bees are also wild of their Nature: Therefore Bees which sit in your Trees, are no more yours than the Birds which build their Nest in it: Therefore a Swarm of Bees, which flies from your Hive, is understood to be yours no longer than it keeps in your Sight, and it is easy to follow it; otherwise it becomes the Property of him who is in Possession of it.

Peacocks, Pigeons, and Harts, are also wild of their Nature; and after they are gone, they are so far understood to be yours, till they have a Mind to return, *i. e.* till they have not forgot their Custom of returning. But Hens and Geese are not wild of their Nature; therefore though these Animals are sometimes frighten'd out of your Sight, they are, notwithstanding, understood to be yours; and he who detains them is accounted guilty of Theft.

By the Law of Nations, we acquire in War not only the Things belonging to the Enemies, but likewise the Enemies themselves; who, because taken by the Hands, are called captive.

By *Invention* are acquired, by the natural Right, the Things which have never been the Property of any Body, as are precious and other Stones found on the Sea-shore.

And if a Treasure be found in a Place, which is the Patrimony of the Person who has found it, the whole Treasure belongs to him. It is the same if it be found by Accident, in a sacred or religious Place. But if it be found on the Ground of another, or in a publick or fiscal Place, and that by Accident, without any premeditated Design, Half thereof belongs to the Finder, and the other Half to the Lord of the Place, or to the City, or to the Fisc, or to the Prince, according to the *Civil Roman Law*, in this Title, *parag. 39.*

Note, That Treasure is defined by the Jurisconsulte *Paul*, *Leg. nunquam. 31. ff. de acquirend. rerum. Domin. Some old Deposition of Money, so entirely forgotten, that no Body has a Right to it.* Then he adds, *for thus it becomes the Property of him who has found it, because it has no other Master. Otherwise if any Body through Avarice, or Fear, to keep it safer, has hid something under Ground, it is not a Treasure; and he who carries it away commits a Theft.*

The Acquisitions of Things given up for lost, is when the Proprietor thereof has so entirely forgot them, that he does not rank them among his Goods; whence they belong to him who finds them.

The second Manner of acquiring Things by the natural Law, or the Law of Nations, is called *Accession*, whereby the Master of the Principal becomes likewise Master of the Accessory.

There are two Kinds of *Accessions*, *viz.* one *natural*, which happens without the Concurrence of Man; and the other *artificial*, which arises from Man's Industry.

To the *natural Accession*, are referred Procreation, Alluvion, an Island borne on a River, and the Mutation of the Bed of a River. Therefore what's born of Animals which are your Property, is acquired to you by the natural Law.

Likewise, what's added to your Field by Alluvion, is also yours by the same Law; which Alluvion is a gradual Addition or Accretion made along the Sea-

shore, or Banks of large Rivers.

The Civil Law places *Alluvion* among the lawful Means of Acquisition, and defines it to be a latent imperceptible Accretion. When any considerable Portion of Ground is torn away at once by an Inundation, and joined to some neighbouring Estate, this is not acquired by Law of *Alluvion*; but may be claimed again by the former.

An Island borne in the Middle of the Sea, is said to belong to the first who takes Possession thereof: If it be borne in the Middle of a River it is divided between those which have Estates bordering on both Sides of the River. But if the Estate of one of the Parties is nearer, the whole Island belongs to him.

If a River changes Beds, the old Bed is acquired to those who have Estates near it, according to the Extent of the Estate.

To the *artificial Accession* are referred *Inedification, Intexture, Implantation, Sation, Writings, Pictures.*

As to what relates to *Edification*, *all that is edified or built on a Ground falls to that Ground*, *i. e.* that the Lord of the Ground is Lord of the Edifices built on that Ground. If any Body, knowing it, builds on his own Ground with Materials belonging to another, an Action is given against him, which is called *de tigno juncto*, not to have the Materials returned, because the Law of the twelve Tables forbids the taking of the *Tignum* which any Body has joined to its Property, to not destroy the Edifices, but to oblige the Guilty to pay double the Value; but if he has done it, thinking those Materials his own, and not knowing that they belonged to another, he'll only be condemned to pay the just Value. By *Tignum* in the Law of the twelve Tables, are understood all the Materials of a Building.

By *Intexture*, the Purple of another wove in your Cloaths, becomes yours by Accession. Likewise by *Implantation*, the Plant which shoots forth its Roots in your Ground, becomes yours; the same must be said of Seed sowed in a Field, and of Letters written on Paper, which though they be Gold, become notwithstanding the Property of him to whom the Paper belongs; but not of the Cloth on which a Picture is painted, because the Value of the Picture exceeds that of the Cloth.

The third Manner of acquiring something by the natural Law is called *Specification*; whereby if any Body, through Ignorance and Inadvertency, has made something of the Materials of another, or Part of it of his own Materials, and the other Part of the Materials of another, becomes the Master of that Thing, provided the Materials cannot be returned to their former State. As if any Body, without knowing it, has made Wine of the Grapes of another, or Part of his, and Part of those of another, which cannot be returned to their former State of Grapes, he becomes Master of that Wine, by paying the Value of the Grapes to the Master thereof: But if the Thing can be returned to its former State, *viz.* a Vessel of Gold, which can be returned to its former State, the Master of the Matter is Master of the Vessel.

The fourth Manner of acquiring something by the natural Law, is *Confusion* and *Mixture*; whereby the Materials of two Proprietors, either by their mutual Agreement or by Accident, being mixed together, become common to both; *Confusion* is said of liquid Things, *viz.* Wine, and *Mixture* of dry Things, as Corn.

The fifth Manner is, *the Perception of Fruits*, from something belonging to another; as when some Body buys an Estate for a Person whom he thought Master thereof, though he is not; the Fruits he gathered while he remained in Possession are his by the natural Law, for his Trouble of cultivating the Ground. But the same cannot be said of him who knows that he is in Possession of an Estate, which belongs to another, for he is obliged to return the Fruits as well as the Ground; whether those Fruits be natural, *viz.* that grow without being cultivated, or any other human Industry, as Apples, Pears, &c. or Fruits of Industry, which will not grow without being cultivated, as Corn, Grapes, &c. whether they be hanging yet on the Root or the Tree, or they be gathered and extant, or gathered and consumed; for he to whom pertains the *Usufruit* of an Estate, is no otherwise rendered Master of those Fruits than as he gathers them himself; and therefore though he die, while the

Fruits are ripe, but not gathered yet, the Fruits do not belong to his Heirs, but are acquired to the Ground-Landlord.

Lastly, the sixth Manner of acquiring something by the natural Law, is *Tradition*; for nothing is more agreeable to natural Equity, than to ratify or confirm the Will of a Person, who desires to transfer his Property to another. *Tradition* is properly of a moveable Thing, viz. of a Book, of a Horse, &c. to which *quasi-tradition* is equivalent, which is of a Thing immoveable, as of a Found, Houses, &c. *Quasi-tradition* can also have Place in Moveables, which *quasi-tradition* is made by *Fiction of short Hand*, or by *Symbol*.

Fiction of short Hand, is when an Act which should have been done is hidden; as when a Person, who has lent you something, sells it afterwards to you; though he does not receive it from you, to return it to you again; for as soon as it suffers it should be yours, you become the Proprietor thereof; as well as if he had received it, and delivered it to you afterwards.

Quasi-tradition is made by a Symbol, when a Person having sold Goods deposited in a Warehouse, transfers the Property thereof, by delivering the Key of the Warehouse to the Purchaser.

TITLE II. Of Things corporal and incorporal.

There is another Division of Things, in Things corporal, viz. which can be handled, whether they be moveable, as a Horse, Gold, &c. or immoveable, as a House, Land, &c. and in Things incorporal, which cannot be handled, and consist in the Law, as Inheritance, *Usufruit*, Obligations in whatever Manner contracted. Among these may be ranked the Rights of urbane and rustick Houses, which are also called *Servitudes*: For besides the *Servitude* heretofore mentioned, whereby a Person is obliged to obey all the Commands of another, there is another Sort of *Servitude*, which is called a Right, whereby the Property of another is subservient to us or to our Property. Whence it is either *real*, when subservient to our Property, or *personal* when subservient to us.

The *real* or *prædial Servitude*, is either *urbane* or *rustick*.

The *Urbane* is that due from a Building or a House, in whatever Place situated, either City or Country, to an urbane Building. The *Rustick* is that due from a Building either *rustick* or *urbane*, to a rustick one.

An *urbane* Building, is that built for the Dwelling of a Man, either in Town or Country.

A *rustick*, is that designed for a rustick Service, whether built in Town or Country.

Rustick Services, are a Passage through which one has a Right to pass and repass through another's Ground alone, and without either Horse, or Vehicle, as Cart, Coach, &c. *Allion*, whereby a Man has a Right to pass through another's Ground, with a Horse, or Vehicle. A *Road*, which is a Right of passing through another's Ground, with a Horse, or Vehicle, and carrying Arms, or a Staff. *Aqueducts*, or a Right of conveying Water through another's Ground, &c.

Urbane Services, are the Right of fixing a Prop in a Neighbour's Wall; the *Right of Spout*, whereby a Neighbour is obliged to suffer that the Rain of his Neighbour's House should fall on his; the *Right of Drain*, whereby my Neighbour is obliged to suffer that the Water of my House should empty itself through his; the *Right of not carrying higher*, whereby my Neighbour is forbidden carrying his House or Building higher, lest he should obfuscate my Prospect, &c.

TITLE IV. Of *Usufruit*.

Personal Services are *Usufruit*, *Use*, and *Habitation*.

Usufruit, is the Use or Enjoyment of any Lands or Tenements; or the Right of receiving the Fruits and Profits of an Inheritance, or any other Thing, without a Power of alienating, or changing the Property thereof.

It is called the *Use* or *Enjoyment*, to distinguish *Usufruit* from bare *Use*: For we make Use of Things belonging to others for our Necessity only; but we enjoy them for our Commodity, and Pleasure; though without the Power of alienating or diminishing the Fund; for as an *Usufructuary* is not the Proprietor of the Thing,

it must take Care that it should not be impaired.

When the *Usufructuary* dies, the *Usufruit* returns to the Proprietor. The Dowry or Jointure of a Widow, is only an *usufructuary* Due; that is, she only enjoys the *Usufruit* thereof, and cannot dispose of the Principal.

All mutual Presents between Man and Wife, only import the *Usufruit* of the Goods of the first that dies, to the Profit of the Survivor.—The Incumbents of Benefices are only *Usufructuary*.—An *Usufructuary* has full Right over the Coppice; but cannot fell Timber-Trees.

TITLE V. Of *Use*, and *Habitation*.

Use, is a Right of using another's Property, but not to enjoy it, whereby *Use* is less than *Usufruit*.

Use imports a Trust and Confidence reposed in a Man for the holding of Land; that he to whose *Use* or Benefit the Trust is intended, shall reap the Benefits thereof.

A Deed consists of two principal Parts: The *Premises*, which include all that come before the *Habendum*, or Limitation of the Estate; and the *Consequent*, which is the *Habendum* itself; wherein are two Limitations, the one of the Estate, or Property, the Party shall receive by the Deed; the other of the *Use*, expressing to or for what *Use* and Benefit he shall have the same.

Uses, say some, were invented in England, upon the Statute of *Westminster*, *quia emptores terrarum*; before which Time no such *Uses* were known. And because, in Course of Time, many Deceits got footing, by settling the Possession in one Man, and the *Use* in another: It was enacted, *Anno 27 Henry VIII.* that the *Use* and Possession of Lands should stand united, or that the Possession should be given to him who had the *Use*.

Habitation, is a Right of inhabiting Houses belonging to others, which Right is not transferable.

All these personal Services are ended in several Manners, but particularly by the natural or civil Death of the Person.

TITLE VI. Of *Ufucaptions*, and long *Prescriptions*.

We have seen already the Manners of acquiring by the natural Law; now we must learn the Manner of doing it by the civil Law.

Of these Manners one is universal, as Inheritance; and other Particulars, as *Ufucaption*, Donation, Legacy, &c.

Ufucaption, is an Acquisition of the Property of a Thing, by a Possession and Enjoyment thereof for a certain Term of Years prescribed by Law.

Some make a Difference between *Prescription* and *Ufucaption*, maintaining that the latter is only used with Regard to Moveables, and the former with Regard to Immoveables. But there is no essential Difference between them; and accordingly *Prescription* and *Ufucaption*, are generally held Synonima's.

Five Things are required to an *Ufucaption* or long *Prescription*.

1. *Honesty*, which the Civil Law requires only at the Beginning of the *Ufucaption*; and the Canon Law for the whole Time: Whence a dishonest Possessor is not capable of *Ufucaption*.

2. A just Title, as Emption, Donation, Legacy, &c.

3. That the Thing be not vicious, such as are Things stolen, or possessed by Force, &c.

4. That the Possession be continual, i. e. not interrupted by litigious Disputes or other Manner.

5. A due Time, or that prescribed by the Laws, viz. three Years for Moveables; ten Years for Persons present, or on the Spot, and twenty for the Absent. Ecclesiastical Goods suffer *Prescription* no sooner than forty Years.

Tourrill calls *Prescription* a Penalty imposed by the Law upon Negligence; and adds, that Possessors who have no other Title to plead but *Prescription*, are only legal Usurpers.

In Effect, however, the Law of *Prescription* does not punish the Indolence of Proprietors, but only interprets their Silence for their Consent; presuming that a Man who neglects to assert his Right for a long Series of Years, gives it up.

There are some of the Lawyers who doubt, whether Time and unjust *Prescriptions* be any legitimate Means

of acquiring? Others, more favourable, call it the *Patroness of Mankind*; as being a general Presumption, under which the Law will have Men live in Peace.

In common Law, *Prescription* is usually understood of a Possession from Time immemorial, or beyond the Memory of Men; as when my Ancestors, or his from whom I have an Estate, have enjoyed and used it all the Time whereof any Memory remains.

But in the civil Law, and even in the *English* common Law, there are *Prescriptions* of a much shorter Date. — *Prescriptions* of forty Years, exclude all Actions whatever.

The Custom of *Paris*, as I have already observed of the fifth Thing required to *Usucaption*, allows of a Prescription of ten Years, if the Parties be present, and twenty if absent, in favour of peaceable Possessors of an Inheritance, if they have any Title, however controverted; and of thirty Years in favour of those who possess without any Title at all.

In *Normandy*, a *Prescription* of thirty Years peaceable Possession, is equivalent to a Title, to Immoveables; and for Moveables and personal Actions, a Prescription of thirty Years suffices.

In *France*, a Prescription of twenty Years is admitted against all Crimes except Duelling, which was excluded by a Declaration of the Year 1679. in Matters of Adultery, five Years suffice, *i. e.* provided there have been a Discontinuance of Prosecution all that Time.

By the Statutes of *England*, a Judge or Clerk convicted of false entering Pleas, &c. may be fixed within two Years; but those elapsed, he prescribes against the Punishment of the Statute.

The Crime of a Maintenance or Embracery, whereby Perjury is committed by a Jury, must be prosecuted within six Days, otherwise the Parties prescribe.

There is no prescribing against a Man's Lord; no *Prescription* avails to take off any Servitude or Tenure: A Title is always required there.

The Author of the History of the Inquisition observes, that no Time of *Prescription* avails in Matters of Heresy; even Death itself does not secure the Suspected from the Researches of that tremendous Court.

TITLE VII. Of Donations.

Donation, is a mere Liberality, which, without the least Obligation, is exercised towards another; and this is either occasioned by Death, or is made between Persons living.

Donation occasioned by Death, proceeds from the Apprehension of Death, and is like a Legacy; whence, the Danger of Death being over, or the Donor repenting of what he has done, or the Donee happening to die before the Donor, the *Donation* is void.

Donation between the Living, is made without any Thought of Death; which, according to the Custom of *Paris*, if it exceeds fifty Pence, must be insinuated, *i. e.* register'd. It is not revoked, unless the Donor happens to have Children afterwards, or the Donee becomes extremely ungrateful.

A *Donation* to be valid and compleat, supposes a Capacity both in the Donor and the Donee; and requires Consent, Acceptance, and Delivery.

There is another Kind of *Donation*, called on Account of Marriage; and made by a Husband to his Wife, in Gratitude for the Portion she has brought to him. This is like what the Successors of the Emperor *Justinian* called *Hypobolon*, *i. e.* an Increase of Dowry, or what at the Husband's Death is given to the Widow, above her Portion.

TITLE VIII. Of those who are permitted to alienate, or are not permitted.

He that has a just and uncontroverted Right to a Thing, can alienate it, *i. e.* can transfer his Right to another; though a Husband who is Master of his Wife's Jointure, cannot alienate it without Consent. Likewise Minors, though Masters of their own Estates, cannot alienate them without the Consent of their Tutors.

TITLE IX. Of those whereby Acquisitions are made.

We acquire a Right to a Thing, not only by ourselves, but likewise by our Children and Servants, who are

under our Jurisdiction, and even by our Attornies, Children notwithstanding, and Servants, are allowed a *Peculium*, by the *Roman* Law, *i. e.* a small Stock which they may acquire by their own Industry, without any Advance or Assistance from their Father or Master, but merely by their Permission.

Servants are allowed but one Kind of *Peculium*; but that of Children is of four Kinds, *viz.* *profectitious*, which they acquire from the Effect, or on Occasion of the Father; *adventitious*, that acquired by Donation, or the Succession of the Mother; *Castrense*, which is acquired in the Army; *quasi-castrense*, which is acquired either at the Bar, or in some publick Office.

A Father has the Property and *Usufruit* of the *profectitious Peculium*, the Use only of the *adventitious*, and nothing in the *Castrense*, and *quasi-castrense*.

TITLE X. Of ordering Testaments.

Inheritance, is the Means of acquiring an universal Right; for it is a Succession to the universal Right the Deceased was possessed of; and this is either by Testament, or by a Person dying intestate.

A *Testament* is a solemn and authentick Act, whereby a Person declares his Will, as to the Disposal of his Estate, Effects, &c.

A *Testament* has no Effect till after Death, and is always revocable till then: As *Testaments* are Acts, of all others, the most subject to Deceits, Surprise, &c. it was necessary to use all Kinds of Precautions to prevent the Wills of the Deceased from being eluded, and the Weakness of dying Persons from being abused.

The most ancient *Testaments* among the *Romans*, were made *viva voce*, the Testator declaring his Will in the Presence of seven Witnesses: These they called *nuncupative Testaments*; but the Danger of trusting the Will of the Dead to the Memory of the living, soon abolished them, and all *Testaments* were ordered to be put in Writing; before seven Witnesses all *Roman* Citizens, and of Age of Discretion, who should affix their Sign and Seal to them.

The *French* Legislators thought *Holographical Testaments*, *i. e.* *Testaments*, wrote wholly with the Testator's Hand, an abundant Security; but the *Roman* Law more severe, did not admit *Testaments* without further Solemnity.

The easiest and most favourable, is the 21st Law in the Code *de Testamentis*, which permits such as are unwilling to trust the Secret of their Testaments to others, to write it with their own Hand, and to close it in the Presence of seven Witnesses, declaring to them that it is their Testament, after which it is to be signed by the seven Witnesses.

Yet the military Testaments were not subject to so many Formalities: The Soldier was supposed too much employed in defending the Laws, to be subject to the Trouble of knowing them.

Add, that Testaments wherein Fathers disposed of their Estates among their Children, had particular Privileges, and were dispensed from most of the ordinary Formalities.

In *England*, a Testament can't be put in Force, before it has been proved before the ecclesiastical Judges, delegated by the Bishop, who is Ordinary of the Place where the Party dies; which is called the *Probate* of a Will or Testament.

The Ordinary is known by the Quantity of Goods the Deceased has out of the Diocese wherein he departed; for if all his Goods be in the same Diocese, then the Bishop of the Diocese, or the Archdeacon, according as their Composition leads, has the *Probate* of the Testament. If the Goods be dispersed in several Dioceses, so that there be any Sum of Note, *bona notabilia*, as five Pounds, out of the Diocese where the Party lived; then is the Archbishop of *Canterbury*, the Ordinary, by Prerogative.

This *Probate* may be made two Ways, either in common Form, or *per Testes*. The Proof, in common Form, is only by the Oath of the Executor, or Party exhibiting the Will, who swears upon his Belief, that the Will exhibited by him, is the last Will and Testament of the Deceased.

The Proof, *per Testes*, by Witnesses, is when over and

besides his own Oath, he also produces Witnesses, or makes other Proofs to confirm, that it is the last Will of the Deceased; and this in the Presence of such as may pretend some Interest in the Goods of the Deceased; or at least in their Absence, after they have been lawfully summon'd to see such a Will proved, if they think fit.

The latter Course is commonly taken when there is Fear of Strife, or Disputes about the Deceased's Goods; for some hold, that a Will proved in common Form only, may be called in Question any Time within 30 Years after.

Where a Will disposes of Lands and Tenements of Freehold, it is now frequently proved by Witnesses in Chancery.

TITLE XII. Of those who are not allowed to make a Testament.

All those who are not forbid, can make a Testament; Slaves, Children under the Jurisdiction of their Father, Lunatics, &c. are forbid.

TITLE XIII. Of Disinheritance of Children.

Parents can disinherit their Children for just Causes, which are fourteen in Number, contain'd in the following Verses:

*Bis septem causis exheres filius esto.
Si patrem feriat; si maledicat ei.
Carcere conclusum si negligat, aut furiosum,
Criminis accuset; vel pareat insidias.
Si dederit damnum grave: si nec ab hoste redemit;
Testarive vetet: se societve malis.
Si minos sequitur; vitietque cubile paternum.
Non Orthodoxus: filia si meretrix.*

i. e. A Son can be disinherited for fourteen Causes; if he strikes his Father; if he curses him; if he neglects him while in Prison, or when he is furious. If he accuses him of a Crime; if he sets Ambuscades for him; if he has done him some great Injury; if he keeps bad Company; if he is a Gamester; if he defiles the paternal Bed; if he is not orthodox; if a Daughter is a Prostitute.

TITLE XIV. Of the Institution of Heirs.

The Institution of an Heir, is to appoint a Successor to the whole Right which the Deceased was possessed of, *Leg. 24. ff. de verb. signif.* by the Roman Laws, either Free-Men or Slaves can be instituted Heirs; either one or several. If several, the Inheritance is to be divided between them. Therefore, in an Inheritance, as in a Pound, there are twelve Parts, called Ounces. Whence he who is Heir to the whole, is called Heir *ex assse*; he that is only entitled to an half, Heir *ex semisse*, &c. therefore an Ounce is the twelfth Part of an Inheritance; sextans, or the sixth Part of an Inheritance, contains two Ounces; quadrans, or the fourth Part, contains three Ounces; triens, or the third Part, contains four Ounces; quincunx, five; semis, six; septunx, seven; bes (as bis, i. e. two Thirds) has eight Ounces; dodrans (to which a fourth is wanted) nine Ounces; dextans (which wants a sixth) ten Ounces; deunx (to which it wants an Ounce) eleven; as, contains twelve Ounces.

If two are instituted Heirs; one of a half, and the other of a fourth, the fourth Part remaining, should be distributed between both at the Rate of every one's Portion, because the Law does not suffer, that he who is Heir to a Part be disinherited of a Part, *lib. 7. ff. de regul. Juris.* on the contrary, if four Heirs were instituted, one for a half, and three for three Portions of the Inheritance; as there are more Heirs instituted, than there are Portions in the Inheritance; something should be taken from every one's Portion, in Proportion to the Portion.

In France there is no Institution of Heirs; for in the Custom of Paris, *art. 318.* He that's Dead provides for the Living, i. e. delivers all his Goods to his nearest Heir, who by his Death becomes Possessor thereof.

There are two principal Kinds of Heirs, *apparent* and *presumptive*.

Heir *apparent* is he on whom the Succession is so settled, that he cannot be set aside, without altering the Laws of Succession.

Heir *presumptive* is the next Relation, or Heir at Law to a Person, who is to inherit of him *ab intestato*; and who, it is presumed, will be Heir: Nothing but a contrary Disposition of the Testator being able to prevent him.

Heir, in common Law, is he who succeeds by Right of Blood, to any Man's Land or Tenements in Fee. For nothing passes in common Law (in England) *jure Hereditatis*, by Right of Inheritance, but Fee.

By common Law, therefore, a Man cannot be Heir to Goods or Chattels; for *heres dicitur ab hereditate*, it is the Inheritance denominates the Heir.

Every Heir having Lands by Descent, is bound by the Acts of his Ancestors, if he be named; it being a Maxim, that *qui sentit commodum, sentire debet et onus*.

Moveables or Chattels immoveable, are given by Testament to whom the Testator thinketh fit; otherwise they lie at the Disposition of the Ordinary; to be distributed as he in Conscience likes best.

The last Heir is he to whom Lands come by *Escheat*, for Want of lawful Heirs; which, in many Cases, is the Lord whereof they are held, but in others the King.

TITLE XV. Of Substitutions.

Substitution is a Disposition of a Testator, whereby he substitutes one Heir to another, who has only the *Usufruit*, and not the Property of the Thing left him.

Substitution is a Kind of fiduciary Inheritance, in Regard the immediate Inheritor has only the Use or Produce of the Thing; the Body thereof being substituted and appropriated to certain Persons, who are likewise to have the *Usufruit* in their Turns, but never the Property.

Substitution is either common or pupillary. Common Substitution is of any Testator to any Heir instituted such, *viz.* in this Manner; *Let Titius be the Heir; or if Titius be not the Heir, Mævius must.*

Pupillary Substitution, is of a Father alone to his Children under the Age of Puberty, who either are not the Heirs, or if they be the Heirs, die within the Years of Puberty: As when a Father says, *Titius my Son shall be my Heir; but if my Son is not to be my Heir, or is to be my Heir, but dies before he is Master of the Estate; then Seius must be my Heir.*

There is another Sort of Substitution, called *exemplary*, made by Parents of both Sexes, to Children, as well those who are arrived at the Age of Puberty, as those who are under it, and likewise to those who are emancipated, or disorder'd in their Senses, &c.

In France, Substitutions are made not only by Testament, but likewise by Contract of Marriage; whereby some Goods pass to the Descendants of a certain Family, *viz.* to the Heirs Male, so that they have only the *Usufruit*, while the Substitution lasts, but cannot alienate the Property, which Substitution only holds to the fourth Generation, according to the Constitution of Orleans, *art. 59.*

Among the Romans there was Abundance of the fiduciary Heirs; who enjoyed Inheritances, till they return'd them into the Hands of the right Heir: And the Reason why they did not likewise restore the Fruits, or that the Fruits were not deemed to make a Part of the Inheritance, but only of the Thing, was, that the Fiduciary or Trustee was obliged to run the Risque, and to stand the Charge of the Culture of the Land. But this was rather *fidei Commissio*, than a Substitution.

Substitution answers to Remainder in the English common Law: For Remainder is an Estate limited in Lands, Tenements, or Rents, given to a Person at second Hand, to be enjoyed after the Decease of another, to whom the same is given immediately, or at first Hand.

A Man grants Lands to one for Term of Life, the Remainder to another for the Term of his Life, which Remainder may be either for a certain Time, or in Fee simple, or Fee Tail.

Spelman makes the Difference between a Remainder and Reversion to consist in this; that by a Reversion after the appointed Term, the Estate returns to the Donor or his Heirs, as the proper Fountain; whereof by Remainder, it goes to some third Person, or Stranger.

Glanville observes, that Bishops and Abbots, in Regard

gard their Baronies are the King's Alms, cannot give any Part thereof by Way of Remainder.

TITLE XVII. *In how many Manners a Testament can be invalidated.*

A Testament is invalidated in three Manners, viz. by a posterior one, made according to Law, and without any Defects; or for *Want of Heirs*, or *per querelam inofficiosi Testamenti*.

TITLE XVIII. *Of an inofficious Testament.*

A Testament is called inofficious, whereby Parents, against all Sentiments of Humanity, disinherit their Children without a just Cause; in which Case, *querela inofficiosi Testamenti*, is given to Children, in *France*, or an *Action in rem*, against the Heir appointed by the Testament, to have it concealed.

This *Querela* ceases, if a legitimate Portion be left to the disinherited. That legitimate Portion, is, by the antient Roman Law, a fourth Part of the Portion he had had of an Intestate. But by the new Law it is a third, if there be four Children or less; and a half if there be more. *Authent. novissim. Cod.* this Title,

*Quatuor aut infra damnatis Jura trientem:
Semissem vero dant natis quinque vel ultra.*

TITLE XIX. *Of the Quality and Difference of Heirs.*

By the Roman Law an Heir is called *necessary*, who is obliged to accept the Inheritance, whether he wills or not. Such were the Slaves; for they were instituted Heirs by their Masters, who were unsolveable, that rather in their Name, than in that of the Deceased, the Inheritance should be sequestered from the Creditors, lest the Reputation of the Deceased should suffer.

A voluntary Heir is he who can renounce the Inheritance, and this is either *his*, or a *Stranger*.

The Heir called *his*, is he who is in the Power of the Testator, and is the nearest in Blood, as a Son or a Daughter; and likewise a Grandson and a Granddaughter, if they be in the Power of their Ayeul. — All others are Strangers.

Voluntary Heirs, in *France*, are entitled to two singular Privileges or Benefits, viz. the *Right of Deliberating*, and the *Benefit of Inventory*, *Benefice d'Inventaire*.

That's called *Right of Deliberation*, whereby a certain Time is granted to the Heir, to deliberate if it be expedient for him to accept the Inheritance, or rather to renounce it; but in the Interim, he must not meddle with any of the Effects of the Succession.

An *Inventory* is a Catalogue of all the Effects of the Succession, by the Benefit whereof, the Heir is not obliged to pay any Debt, but as far as there are *Affites* or Effects in the Succession to pay those Debts.

TITLE XX. *Of Legacies.*

A *Legacy* is a certain Donation left by the Deceased, which the Heir is obliged to pay.

The *Falcidian Law*, made by *Falcidius*, Tribune of the People, forbids that any Body should bequeath in Legacies, more than three Parts of the Inheritance; that one Fourth whereof at least may remain to the Heir or Heirs.

In the Custom of *Paris*, and of the other Provinces of *France*, where a Difference is made between proper Goods, or Goods acquir'd before Marriage, and those acquir'd in Marriage, by the Husband and Wife jointly; one can bequeath in Legacies, only the fifth Part of his own proper Goods or Estate; so that it is necessary that the four other Parts remain to the Heir, *art. 295. consult. Paris.*

TITLE XXI. *Of Fidei-Commissionary Inheritances.*

Fidei-Commission, in the Roman Law, is the appointing an Heir, or bequeathing a Legacy to a Person on this Condition, that he surrender the Inheritance or Legacy to another Person, for whom the same is originally meant: Or it is an Inheritance left in Trust with any one, for the Use of another.

Fidei-Commissa were much used among the Romans. In the French Law the Thing is become odious; as being ordinarily no other than an Expedient in Favour of Per-

sons to whom the Law forbids any Thing to be given. In order to this, some trusty Friend is chosen to be made legal Heir, under a tacit Agreement to deliver the Inheritance to the Person incapacitated by Law. But of latter Times the same Expedient has come in Use in *England*, with Regard to Persons capable of inheriting; to whom the Testator, for particular Reasons, does not care to leave the Inheritance directly.

As it happen'd that the *Fidei-Commissioners* did not always faithfully restore what was trusted to them, *Augustus* took proper Measures to oblige them thereto: To this End a Pretor was erected, whose Business was restrained to the single Matter of *Fidei-Commissions*.

As a Testament was null without the Institution of an Heir, and it frequently happening that the *Fidei-Commissioner* refused to accept the Trust, upon which the Testament fell to the Ground; to engage somebody to accept it out of the Consideration of Advantage, the *Pegasian Senatus-Consultum* decreed, that the *Fidei-Commissioner* should be at Liberty to retain a fourth of the *Fidei-Commission*.

From the THIRD BOOK.

TITLE I. *Of Inheritance left by an Intestate.*

Intestate is a Person who dies without making a Will, or has not made it according to Law, or that he had made is concealed, or null, or is made without the Institution of an Heir.

By the Law of the twelve Tables, the Inheritances of *Intestates*, pertains in the first Place to their Heirs; such as a Son, a Daughter, &c. in the second Place, to Cousins in the Masculine-Line: In the third Place, the Pretor calls near Cousins, those in the Feminine-Line. But *Justinian* abolished those Distinctions between Cousins, &c. *Novel. 118. c. 4.*

Therefore according to the Law of *Novels*, the Descendants from an *Intestate* succeed, *Novel. 118. c. 1.* and that Succession is either *in capita*, or *in stirpes*.

The Succession, *in capita*, is when an Inheritance falls according to the Number of the Persons. In this Manner Children of the first Degree succeed, viz. Sons and Daughters, without any Exception of Sex.

Succession, *in stirpes*, is made by Right of Representation; as if a Father dying leaves a Son alive, and Children of another Son deceased; the Children shall represent their deceased Father, and divide the Inheritance equally with their Uncle; because the nearest in the descending Line, never exclude those more distant in the other descending Line.

If there are no Descendants, the Succession belongs to the Ascendants; so that the nearest Relation always excludes the more distant, *ead. Novel. c. 2.*

For Want of Descendants, the collateral are admitted to the Succession; and first German-Brothers, *in capita*; with these are called the Children of German-Brothers, *in stirpes*; who, if they be alone, divide likewise the Inheritance, *in capita*, *ead. novel. c. 3.*

After German-Brothers, and their Children, come Brothers related on one Side only; and likewise the Children of those Brothers deceased. If there be neither Brothers, nor Brothers Children, come the next Relations; and of these, those equal in Degree, are equally admitted; so that the nearest related, excludes a more distant Relation. *Ibid.*

These failing, likewise, the Wife succeeds her Husband, *Leg. 1. cod. unde. Vir & Uxor.* For Want thereof the vacant Inheritance falls to the *Fisc*.

The Customs are different in some of the Provinces of *France*, with Regard to Successions, *ab intestati*.

In the *English* Law there are two Kinds of *Intestates*: The one *de facto*, which are those who make no Will at all; the others *de jure*, called also, *quasi intestati*, which are those who make a Will, but it is null and void, either from the Executors refusing to act, or from some other Cause; in which Case they are judged to die as *Intestate*, *quasi intestati*.

The *Executor* of a Testament is a Person nominated by the Testator, to take Care to see his Will and Testament executed or performed; and his Effects disposed of according to the Tenor of the Will.

An *Executor* is either *universal*, as having the Charge and Disposal of the whole; or only *particular*, entrusted with

with some particular Branch thereof.

By the *French Law*, an Executor should be possess'd of all the Moveables of the Deceased, during one Year; at the End whereof he is to account for them. To the Validity of a Testament, it is not necessary there be an Executor nominated therein.

Executor de son tort, or of his own Wrong, is he who takes on him the Office of an Executor, by Intrusion, not being constituted thereto by the Testator, or Deceased, nor authorized by the Ordinary to administer.

TITLE XIV. Of Obligations.

Obligation is an Act, whereby a Person engages or binds himself, or is bound by another to do something; as to pay a Sum of Money.

There are three Kinds of *Obligations*, *natural*, *civil*, and *mixt*.

Natural Obligations are found on the mere Bond of natural Equity, without any civil Necessity, and without producing any Action of Constraint. For Example, I am obliged by a natural Obligation, to serve the Person who has served me when I wanted his Assistance; but that gives him no Action against me, whereby he can compel me to it. — Such are the Obligations a Minor is under.

Civil Obligation is that supported on civil Authority alone, and which induces a Constraint, without any Principle or Foundation on natural Equity. Such is the Obligation on a Man condemned unjustly.

Mixt Obligation, or an *Obligation*, both natural and civil, is that which being founded on natural Equity, is further confirmed and enforced by civil Authority.

All *Obligations* arise from Contracts, or Quasi-Contracts; and from Crimes, or Quasi-Crimes.

Contract is a Kind of *Convention*; and *Convention* is a mutual Consent of two, or more Parties, who promise and oblige themselves voluntarily to do something. It is also called *Paction*, *Pañ*, or *Covenant*; unless you rather chuse to say, that *Pañ* or *Covenant* is that which results from *Paction* or *Convention*.

Therefore *Convention* or *Pañ*, is like the Genus, which is attributed to the Species. For *Convention*, if it has not a particular Name from the civil Law, nor a Cause, it retains the general Name of *Convention* or *Pañ*; and produces only a natural *Obligation*, i. e. which has its Origin from the Faith given, and natural Equity; which though it does not produce an Action of Constraint; it notwithstanding is of no lesser Force with a Man of Probity, than a civil Obligation. But if the *Convention* has either the Name or the Cause, it is called a *Contract*, and produces an Obligation efficacious to act.

Therefore a *Contract* is a *Convention* which has either the Name or the Cause. Whence one is *nominate*, and the other *innominate*.

An *innominate Contract* is that which has only the Cause, and not a special Name. The Cause is a Donation or a Deed. As if two have agreed between themselves of something, and the Convention has took its Beginning from the Donation or Deed of one of them, the *Contract* is *innominate*, whence ensues an Action on him who has neither given nor done, what had been agreed to give or to do. Such a *Contract* is reduced to four Chiefs; viz. *do ut des*, I give that you should give; *do ut facias*, I give that you should do; *facio ut des*, I do that you may give; *facio ut facias*, I do that you should do.

That *Contract* is called *nominate*, which has a proper Name from the civil Law; such are these, *Leg. XII. Tab. Mutuum, Commodatum, Reward, Emption-Vendition, Location-Conduction, Society, and Mandatum*. For as the Use of these Sorts of *Contracts* is so very frequent, that the civil Society, it seems, cannot subsist without them, the civil Law has given them a proper Name and Force, to produce *Obligation* and *Action*.

I must speak first of *Obligations* arising from a *Contract*; and treat afterwards of those which arise from a *Quasi-Contract*; and likewise from Crimes and Quasi-Crimes.

Contracts are made in four Manners, either *re*, or by Words, or by Writings, or by Consent.

TITLE XV. In what Manner an Obligation is contracted, re.

Contracts are performed *re*, in which the Invention of a Thing is necessary; and are *Mutuum, Commodatum, Depositum, Reward*.

Mutuum is a *Contract* whereby we transfer our Right to something to another; upon Condition that he shall return another Thing of the same Quantity, Nature, and Value, on Demand. For Example, I have given you, by a *Mutuum*, a Measure of Corn, or of Oil, not upon Condition, that you should return it in Number, but only in Specie; whence *Mutuum* is properly of those Things which consist in Weight, Number, and Measure, or the Use thereof is the Consumption of the Things; and of which the one supplies the Place of the other. Of that Kind are Corn, Wine, Oil, &c. Money is not consumed directly by itself, but only indirectly, in as much as it is given for the Price of the Things which are consumed.

Therefore the *Mutuum* must be gratuite, i. e. without Reward or Interest; nothing being Return but the Thing itself which was given, or the Value thereof; which is called the *Capital* or *Principal*. For *Mutuum* supposes always a Kind of Indigence, in the Person to whom the Thing is lent or deliver'd; and proceeds from a Motive of Charity, or Humanity. For, v. g. we do not give, by a *Mutuum*, Wine, or Corn, or Money, to those who want none of those Things, but only to those who want them. Therefore they who exact something for the *Mutuum*, offend against the *natural Law*, because they take Advantage of one's Indigency. This was the Sentiment of the Pagans themselves, who were not at all ignorant of this Principle of the *natural Law*.

Quod tibi non fieri cupias, ne feceris ulli.

Hence it is that *Aristotle, lib. 1. Politic. c. 10.* teaches us, that this Way of getting Money is abhorred by Nature itself. And *Cato, apud Cicer. lib. 2. de officiis*, at the End, is of Opinion, that Usury is no less against Nature, than Murder. *Plutarch* exclaims much against this Sort of Commerce, in his little Commentary, *de Aere alieno*.

What the Pagans had declared to be against the Law of Nature; appears to be likewise fulminated by the divine Law, from several Passages of the Scripture, *Exod. xxii. 25. If thou lend Money to any of my People that is poor by thee, thou shalt not be to him as an Usurer, neither shalt thou lay upon him Usury. Levit. xxv. 36. Take thou no Usury of him or Increase. Psalm xv. among the Perfections of a Man of Probity, these are reckoned, Ver. 5. He that putteth not his Money to Usury. Psalm lv. 11. this is attributed to the unjust Man, Usury and Guile depart not from his Streets. Ezek. xviii. 17. God says, that it is necessary the Just should not receive Usury nor Increase. And xxii. 12. he reproves the City of Jerusalem in these Terms, Thou hast taken Usury and Increase, and thou hast greedily gained of thy Neighbours by Extortion.*

But in a more particular Manner, Christ gives this Precept to the Christians who are obliged to consider all Men as their Brethren, *Luke vi. 35. And do good, and lend, hoping for nothing again, and your Reward shall be great.*

A Custom, notwithstanding, had prevailed among the Romans, to say nothing of other Nations, not to give their Money so much by a *Mutuum*, but to put it at a certain Rate, in the Hands of the Rich, from whom, besides the principal, they received an Interest, as we learn from *Horace, Ep. 1. lib. 2.*

Cautos nominibus certis expendere nummos.

Which Custom prevail'd likewise, under the Christian Emperors, to *Justinian's* Time. As it appears from the Titles of the Digests, and of the Code of *Justinian, De Usuris*.

For though Money be sterile, and cannot produce of itself other Money, it notwithstanding can become fecund in the Hands of a skillful Merchant; and as it can be consumed, at least indirectly, viz. in buying either Food

Food or Raiment; it can likewise produce other Money in the Commerce.

But the most common of those Usuries, was thus established by the *Roman* civil Law, that one should receive One *per Cent.* in every Month, for the Interest of his Money; for the *Romans* called in every Month the Principal and Interest; and then placed it again for the next following Month, according to the same *Horace*, *Epod.* 2. towards the End.

*Hæc ubi loquutus fæneratur Alphius,
Janjam futurus rusticus,
Omnem relegit idibus pecuniam,
Quærit Calendis ponere.*

This Sort of Interest, which was exacted every Month, produced every Year Twelve *per Cent.* Therefore it is reduced in our Manner of Reckoning, to almost an Eighth: Since eight Times twelve is 96, all the other Interests were regulated according to that of one *per Cent.*

But after the Emperor *Justinian's* Time, all Kinds of Usuries were forbidden, by the canonical Law, among Christians, as it appears 2 *Part. decret. grat. causa* 14. *quest.* 3. and in the whole Title of the Decretale of *Gregory IX. De Usuris*; and elsewhere. This same Law has been received and put in Force throughout all the Dominions of the Most Christian Kings; as it appears evidently from the Constitutions of our Kings, *viz.* *St. Louis, Philip IV. Louis XII. Charles IX. and Henry III.* and by an Arrest or Decree of the Parliament of *Paris* made the twenty-sixth of *July*, 1565.

But if I buy of you a Pension for a certain Sum of Money, according to the Taxation of the Prince, so as to be deprived of the Liberty of calling back that Sum, while, on the contrary, you have that of returning it to me when you please, and thereby free yourselves of the Trouble of paying me my Pension, such as are the Contracts, whereby Sums of Money are placed in the Town-House of *Paris*, and elsewhere; whereby the Person who places thus his Money, acquires an Annuity, resigning, at the same Time, his Claim to the Capital; then there is no Usury committed; since it is rather an Emption, than a Mutuum, as declared by *Martin V. Extravagant. commun. lib. 3. Tituli. 5. de empt. & vendit. c. Regimini* 1. and this Jurisprudence is followed by the Christian Princes.

But though it is not licit to take Interest from a Mutuum, as it is a Mutuum, it is notwithstanding licit to do it, either when there is no Usury, or by Reason of some Damage resulting from it.

For 1. If any Body suffers some Damage by the Mutuum given, *v. g.* if he cannot repair his House which is ready to fall, or which is fell: If he cannot pay a Debt, and has been condemned by the Judge not only to pay the Principal, but likewise the Charges of the Suit; he is permitted to receive something above the Principal, to repair the Damages he has suffer'd.

2. If one has a favourable Occasion to place his Money to Advantage, *viz.* in a lawful Commerce, or to buy an Estate, or any Thing else of that Nature; as there is then no Usury, he can, with a just Cause, desire something above the Principal from his Mutuum; provided there be no Deceit in it; for if they deceive Men, they cannot deceive the sovereign Judge.

Besides the *Mutuum* there is a *Promutuum*, *viz.* when something is paid which was not due; and this therefore is to be return'd as if it was a *Mutuum*.

Commodatum, or *Commodate*, is a Contract whereby something is given for a certain Time; for a certain End, &c. on Condition, that the Time expired, and the End over, of restoring again the same Individual.

The *Commodate* is a Kind of Loan: There is this Difference, however, between a Loan and a *Commodate*, that the latter is *gratis*, and does not transfer the Property; the Thing must be return'd in Essence, and without Impairment; so that Things which consume by Use or Time, cannot be Objects of a *Commodate*, but of a Loan, in Regard they may be return'd in Kind, though not in Identity.

Precarium has an Affinity with the *Commodate*, which can be recalled whenever one pleases, without any Regard to Time.

Depositum, *Deposite*, is a Thing put in the Hands of another to be kept *gratis*.

The *Civilians* divide *Depositum* into *simple* and *judiciary*.

Judiciary Deposite, is that whose Property is contested between several Persons, and deposited in the Hands of a third Person, by Decree of a Judge; and this is called *Sequestration*; which *Sequestration* is either *voluntary* or *necessary*. *Voluntary Sequestration*, is that which is done by Consent of both Parties. *Necessary Sequestration* is that which the Judge doth by his Authority, whether the Parties will or not.

Note, That in the civil Law, *Sequestration* is the Act of the Ordinary, disposing of the Goods and Chattels of one Deceased, whose Estate no Man will meddle with. A Widow is also said to *sequester*, when she disclaims having any Thing to do with the Estate of her deceased Husband. Among the Catholics, in Questions of Marriage, where the Wife complains of Impotency in the Husband, she is to be sequester'd into a Convent, or the Hands of Matrons, till the Process be determined.

Sequestration is also used for the Act of gathering the Fruits of a Benefit void, to the Use of the next Incumbent. In the Time of the civil Wars, *Sequestration* was used for a seizing of the Estates of Delinquents, for the Use of the Commonwealth.

Simple Deposite, is either *voluntary* or *necessary*. *Necessary* is that done in Case of Hostility, Shipwreck, Fire, &c. Innholders are responsible for the Baggage brought to them, as being a *necessary Deposite*.

Depository, in the *French* Law, is a Person entrusted as Keeper, or Guardian of any Thing.

Ordinary Depositaries, are not to warrant the Thing left with them, in Case it be lost or stolen. They are only to answer for a Fraud, or Breach of Faith; not for Negligence. But a *necessary Depository*, as an Innkeeper, is accountable for a Theft or Robbery, if there have been any Negligence in the Case; and even by the *English* Law, whether there were any Negligence or not; which is extremely just, since that specious Pretext of Negligence, would uphold several flagrant Robberies.

Pignus, *Gage*, or *Pledge*, is a Contract, whereby a Thing is given to a Creditor for Security of his Debt, upon Condition that the Debt paid, he shall return the Pledge.

TITLE XVI. Of Verbal Obligations.

Antiently Contracts were made by Words of Mouth, which were called Stipulations, from *stipulare*, to stipulate, to confirm; as *Justinian* observes, in this Title, at the Beginning.

Therefore *Stipulation* is a solemn Discourse, whereby one being asked if he will give, or do the Things he is asked, answers: For to stipulate is nothing else but to ask one to promise us something. The Stipulations were made in this Manner: You answer for it? I answer; you promise? I promise, you'll do it? I'll do it. In our Time, those Sorts of Stipulations are not only contracted by Words of Mouth, but are also consigned in Writing, in the Hands of a publick Notary; and we can stipulate, not only by ourselves, but likewise by our Attornies.

The *Stipulation* can be made in any Language, provided the Questions and Answers be understood; and must be of our own, not of another's Property.

TITLE XXI. Of Fide-Jussors.

Fide-Jussor, is a Surety; or one that obliges himself in the same Contract, for the greater Security of the Creditor, or Stipulator. Therefore a *Fide-Jussor*, is a verbal Obligation; whereby, he that takes the Obligation of another upon him, remains Obligee as the principal Debtor.

The *Fide-Jussor* not only obliges himself, but likewise his Heirs, &c. All those who can oblige themselves, can be *Fide-Jussors*. The *Senatus-consultum Telleianum*, forbids Wives taking upon them the Obligation of another. If there be several *Fide-Jussors*, as many as there are, are obliged to discharge the Obligation; therefore

the Creditor can claim the Debt from whom he pleases: But by the Epistle of the Emperor *Adrian*, the Creditor is compelled, when he has begun a Suit for the Recovery of his Debt, to sue each of them for his Quota; which is called the Benefit of Division. Besides, from *Novel. 4. Justin, c. 1.* the *Fide-Jussores* have the Benefit of Order, or *Excussio*, whereby the Creditor must call to account the principal Debtor, and examine his Faculties, before he can come upon him.

TITLE XXIV. Of Emption and Vendition.

Having treated of the Contracts made either *Re*, or Words; there remains to treat of those made by Consent or Agreement alone, *viz.* to the Substance whereof are required neither Words, nor Writing, nor the Delivery of the Thing; and these are *Emption-Vendition*, *Location-Conduktion*, *Society*, and *Mandatum*.

Emption-Vendition, is a Contract made by Consent alone, whereby the Buyer may have a certain Thing from the Seller for such a Price; which Price must be certain, and consist of Money: For when a Thing is given for another, it is not *Emption-Vendition*, but only *Permutation*.

In this Sort of Contracts, there should be no Craft used to induce the Buyer to buy what otherwise he had not bought.

When the *Emption-Vendition* is contracted, *i. e.* when the Seller and Buyer have agreed on the Price, whether it be put in Writing or not, the Buyer is obliged to bear the Risques of the Merchandize, though it be not yet delivered to him, unless there be some Fraud on the Part of the Seller; or he has engaged himself to keep the Merchandize safe, till the Delivery thereof. Whence, if by the Overflowing of a River, an Estate, or Part thereof is swallowed up, the Buyer is obliged to bear the Loss, though not yet in Possession; likewise, if by the Decrease of the Water, or otherwise, an Increase happens to the Estate, it is to the Advantage of the Buyer; since he that runs the Risque, must also enjoy the Benefit.

Sacred, or religious Places, were not suffer'd to be bought, among the *Romans*, *i. e.* if those who bought them knew them to be such; for then the Contract was void; but it is a heinous Crime among Christians, to buy spiritual Things, or annexed to spiritual, as the Gifts of the Holy Ghost, Ordination, or Benefices, which is Simony, or the Crime of *Simon Magus*.

There are several other Manners of acting against Justice and Equity in *Emption* and *Vendition*; for there are some who sell Merchandizes either spoiled or damaged; or who sell at a Price far exceeding the just Value of the Thing. Some taking Advantage of the Necessity of the Seller, under-value his Goods, tho' they sell them afterwards themselves at a vast Price.

There is another Sort of *Emption-Vendition*, which is very criminal, and which took its Origin in *Spain*, where it is called *Mobatra*; and is this: A Person wanting Money, takes in Trust of a Merchant, Merchandizes at an excessive Price, which he sells at a vile Price, but for ready Money, to the same Merchant. This Method of *Emption-Vendition*, was condemned by a Decree of *Innocent XI.* given the second of *March*, 1671.

TITLE XXV. Of Location-Conduktion.

Location-Conduktion, is a Contract by which any Thing is let out, on Rent. *Location* and *Conduktion* are relative Terms, and are used as well for the Action of him that lets, as for that of him who takes on that letting.

Tacit-Location, is when the Person who takes, continues on the Premises beyond the Term of his Lease; which by the civil Law he is allowed to do, at least for the Space of a Year, on the same Terms.

Emphyteusis, has an Affinity with *Location-Conduktion*, and is the letting out of poor barren Lands for ever, or at least for a long Term of Years on Condition of the Tenant's cultivating, meliorating, or mending them; and paying a certain yearly Consideration.

Emphyteusis are a Kind of Alienations, differing from Sales, in that they only transfer the *Dominium utile*, the Benefits of the Ground, not the Property, or Fee simple.

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Among the *Romans*, they were at first temporary; afterwards perpetual.

The 20th Canon of the Council of *Carthage*, prohibits the Bishops seizing the Church *Emphyteusis* out of the Hands of private Persons, unless they have been three Years without paying Rent.

TITLE XXVI. Of Society.

Society is a Contract or Agreement between two or more Persons, whereby they bind themselves together for a certain Time, and agree to share equally in the Profits or Losses which shall accrue in the Affairs for which the Society or Copartner-ship is contracted.

The *English* have several very considerable Societies of this Kind; as the Merchant Adventurers, the *Turkey*, *East-India*, *Muscovy*, *Eastland*, *Greenland*; *Spanish*, *African*, *South-Sea*, and *Hudson's-Bay* Company.

By the *Roman* Law the social Contract needs no other Solemnity, but the sole Consent of Parties, without any Writing at all: But among us, Articles of Copartner-ship are required. There is no Contract wherein Probity is more required than in Society; in as much as the Laws pronounce those null, that are made contrary to Equity, and with Design to deceive.

The *French* distinguish three Kinds of mercantile Societies; *ordinary Society*, called also *collective* and *general*; *Society in commendam*, or *Commandity*; and *anonymous Society*, called also *momentary* and *inconnue*.

The first is, where several Merchants act alike in the Affairs of the Society, and do all under their collective Names, which are publick and known to every Body.

Society in commendam, &c. is that between two Persons, one of whom only puts his Money into the Stock, without doing any other Office of a Copartner; the other, who is called the *Complementary of the Society*, dispatching all the Business under his own Name. This Society is very useful to the State; in as much as all Kinds of Persons, even Nobles, and Men of the Robe, may contract it; and thus make their Money of Service to the Publick: And those who have no Fortune of their own to trade withal, hereby find Means of establishing themselves in the World, and of making their Industry and Address serviceable.

Anonymous Society, is that where all the Members are employed, each particularly in the common Interest, and each accountable for Profits, &c. to the rest; but without the Publick being inform'd thereof; so that the Seller has only an Action against the particular Buyer, no other Name appearing. It is also called *momentary*; because frequently made on particular Occasions, and ceasing with them; as in the making a Purchase, the selling any Commodity, &c.

Of this we distinguish three Kinds: *Society by Participation*, which is usually formed by Letters from one City to another, where Merchandize is to be bought or sold. The second is when two or three Persons agree to buy up the whole of some Commodity, in any Country; to sell it again at their own Price; and the third is, when three or four Persons make a Journey together, to buy and sell the same Commodity. Besides Merchants, People of Quality, &c. are admitted into these *anonymous Societies*.

The Profit and Loss must be so equally divided in a Society, that every Member should receive, or bear his Share of both, in Proportion to the Interest he has in it. For a Society cannot be formed, where one has all the Profit or Gain, and the other bears all the Loss; which Kind of Society, is called *Leonian*, *Leg. 29. ff. pro Socio*, in Allusion to the Fable of *Asop*, where the Lion divided the Prey with the Fox, in such a Manner that he retain'd almost the whole for himself.

A Society contracted with a View of monopolizing, one or several Commodities, is unlawful. For *Monopoly* is an unlawful Kind of Traffick, when one or more Persons make themselves sole Masters of any Commodity, Trade, Manufacture, or the like, with Design to enhance its Price; those who have Occasion for it, being obliged to purchase it at their Hands, and on their own Terms. These are by the Law *6. ff. de extraord. crimin.* entirely excluded from the Benefit of Commerce, and are besides banished or condemned to the publick

publick Works : And *Lex unica jubemus cod. de monop.* speaks thus against them, *And if any Body has the Presumption to exercise Monopoly, he shall forfeit his Estate, and be condemned to perpetual Banishment.*

TITLE XXVII. Of the Mandate.

Mandatum, Mandate, is a Contract whereby a Person undertakes to manage the Affairs of another *gratis* ; and this is either on account of the Person who commands alone, or on his Account and on that of another ; or on his Account, and on that who receives the *Mandate* ; but in whatever Manner it may be done, he that accepts the *Mandate*, must carefully answer the Ends proposed by him who gives it ; for he was free to accept the *Mandate*, but when he has once accepted it, he must execute it, provided it be not against good Manners.

These are all the Kinds of Contracts contained in *Justinian's Institutes* ; some whereof are of the Law of Nations, or introduced by the Law of Nations, *viz.* the *Mutuum, Commodate, Depositum, Pledge, Emption-vendition, Location, Conduction, Society, Mandate*, and others of the *Civil Law*, as all Sorts of Stipulations.

Besides, there are some which are only obligatory on one Side, as the *Mutuum* ; and others on both Sides, as the *Commodate, Depositum, &c.* when they are obligatory on one Side only, but one of the contracting Parties has a Right of Action against the other, *v. g.* in the *Mutuum*, an Action is granted only to him, who has given the *Mutuum* against him who has received it, to oblige him to return it. The Action ceases, if any Body gives Money to a Child under Age : For by the *Macedonian Senatus Consultum*, mentioned *instit. lib. 4. tit. 7. par. 7.* it is forbidden to give a *Mutuum of Money* to a Minor ; and if it be given, an Action is not granted against him, even after his Father's Decease. To let those know, who by a dangerous Example, feed the Luxury of young Persons, that they are to expect no Redress from the Law.

If the Contract obliges both Parties, an Action is granted to both, a direct one to one of them, and a contrary to the other, *v. g.* a *direct Action* is granted to him that has given the *Commodate*, to force him who has received it, to return it ; and a *contrary Action* is granted to him who has received it, against him who has given it, for his Indemnification : The same is to be said of the *Depositum, Mandate, &c.*

TITLE XXVIII. Of Obligations arising from a Quasi-contract.

An Obligation arises not only from a Contract, but likewise from a *Quasi-contract*, *v. g.* if I transact the Affairs of a Person absent, without his Knowledge or his Order, I seem as if I had contracted with him ; whence follows an Action of Affairs transacted, *direct* and *contrary* ; a direct one given to the Master whose Affairs I have transacted to bring me to an Account ; and a *contrary* one to me who have transacted the Affairs against him whose Affairs I have transacted, for the Expences, and other necessary Charges that I have been at for him during my Administration. Likewise a Tutor is understood to have contracted with his Pupil, whose Tutorage he has administered. Whence a direct Action is given to the Pupil on his Tutor ; and a contrary one to the Tutor on his Pupil. Likewise if a Thing be common to several without a previous Society, *viz.* if a Thing be given to them, or bequeathed by Testament, they seem as having contracted between themselves. Hence arises an Action, called the *communi dividendo*, whereby one asks against the other that the Thing should be divided : The same may be said of a common Inheritance, which is to be divided between several Persons ; for to every one of the Heirs is granted an Action against the Co-heirs, *familiae eriscende*, for the Partition of the Inheritance ; and the Heir is obliged to the Legatees by a *Quasi-contract*.

An Action is taken off in several Manners, but particularly by paying the Debt, or by *Novation*, *i. e.* by the Transfusion or Translation, of the former Debt into another Obligation, either natural or civil.

From the FOURTH BOOK.

TITLE I. Of Obligations arising from Crimes.

Obligations are said to arise from Crimes, which arise either from Theft, or Rapine, or Injury, or Damage.

Theft, is *unlawfully and feloniously taking away, in View of Gain, either the Thing itself, or the Ease or Possession thereof, contrary to the natural Law.*

When it is said the taking away, it is understood of moveable and personal Goods, it must be likewise a felonious taking away, because without a Design of unjustly taking away another Man's Goods against the Owner's Will, it is no Theft. And this is admitted not only with Respect to the Proprietor, or Master of the Things, but likewise with Respect to him who has only the Use thereof : Therefore a Depositary who makes use of the Depositum, a Creditor who makes use of his Pledge, &c. otherwise than it agrees, &c. commits a Theft contrary to the natural Law.

Theft is divided in *England* into Theft or grand Larceny, properly so called, and petty Theft, or petty Larceny ; the former whereof is of Goods above the Value of 12 *d.* and is deemed Felony ; the other, which is of Goods under that Value, is not Felony.

Open Theft, from the Person, or in Presence of the Owner, is properly called Robbery.

TITLE II. Of Goods taken by Force.

Is the violent taking away by Fraud moveable Goods, against which an Action is given, called *vi bonorum raptorum* ; which, within the Year, is of the Quadruple, and after the Year, of the Simple.

TITLE III. Of the Aquilian Law.

The *Aquilian Law* was made by *Aquilius Gallus*, Tribune of the People ; according to *Ulpianus, leg. 1. ff. ad leg. Aquil.* Whence it is more properly called *Plebiscitum* : This Law contained three Chiefs.

The first Chief was this ; If any Body killed a Man maliciously, or a Beast of the Flock, he was condemned to make Satisfaction to the Master thereof, to the utmost such a Thing could produce in one Year.

That Person is understood to kill maliciously, who has no Right to do it ; therefore he who killed a Thief, who way-lay'd him, was not liable to an Action of Injury, *v. g.* if he could not otherwise avoid the Danger.

Neither is he who by Accident kill a Man or Beast, subject to this Law, provided it is not his own Fault, *viz.* if any Body exercising himself in Shooting, kill your Servant ; if he be a Soldier who kills him, in a Field where Forces use to exercise, he is not guilty : But if it be another Person, he is guilty.

Ignorance renders likewise a Man guilty, *v. g.* if a Quack kill a Man by his Ignorance in the Profession he pretends to, and by administering other Remedies than those which are proper for his Malady, he is guilty of Murder ; by the Name of Physician are understood here Apothecaries and Surgeons ; for antiently Physicians, not only prescribed, but likewise composed their Remedies, cured Wounds, cupped, &c. *leg. qua actione. 7. parag. ultim. ff. ad leg. Aquil. leg. 4. ad leg. Cornel. de Sicariis.*

The second Chief of the *Aquilian Law* being already obsolete in *Justinian's* Time, was not published by him.

The third Chief relates to all other Kinds of Damages whatever ; as if one wounded the Servant, or Beast of another, or spoiled his Wine, or otherwise destroyed something else belonging to him, he who did the Damage was obliged to restore to the Master the full Value of the Thing damaged, within thirty-two Days reckoning backwards.

TITLE IV. Of Injuries.

Injury, in a general Sense, signifies any Thing contrary to Justice and Equity, that is, any Wrong or Damage done to a Man's Person, Reputation, or Goods.

Injury is done either by Deeds, or Words, or Writings. It is done by Deeds, when one pushes another, or beats him, or tears his Cloaths, or enters his House by Force, or attacks the Virtue of a married Woman, or of a Maid, &c. It is done by Words when one insults another.

ther, or calumniates him to take away his Reputation, &c. By Writings, when any Body publishes an infamous Libel against another.

A Man suffers Injury not only in himself, but likewise in his Wife, Children, Servants, and in all those related to him.

By the *Roman Law* the Action for an Injury was annual, that is, no Reparation could be required after the Expiration of a Year. By the Law of the twelve Tables, where the Injury was the breaking of a Limb, the injured Person might demand *Talionem*, that is, that he might break the same Limb of the Criminal.

For the breaking of a Bone, there were considerable pecuniary Punishments assigned: For other Injuries, only twenty Asses were decreed, which the Poverty of those Times thought a sufficient Penalty: But the Pretors afterwards finding that too slender a Satisfaction, in lieu thereof, appointed the injured Person to set a Rate on the Injury, which they afterwards increased or lessened as they thought good; which Practice is followed in our Times, regulating the Satisfaction on the Cause, Person, Time, Quantity, Quality, and Event. Sometimes the Offender is only condemned to retract himself, and to beg Pardon on his Knees, of God, of the Judge, and of the Persons injured.

TITLE V. Of Obligations arising from Quasi-crimes.

Quasi-crime, is the Action of a Person who does Damage, or Evil involuntarily; but is committed either through Ignorance, Impudence, and sometimes for the Fact of another: Of which there are four Examples in this Title.

The first is when a Judge, through Imprudence, pronounces a wrong Sentence, making thereby the Cause his own, *i. e.* is forced to take the Cause to himself, and defend it against the adverse Party.

The second is, *de dejectis & effusis*, viz. when something is thrown from one's House which hurts the Passengers.

The third, when something is put or hanged up in a thoroughfare, which can be offensive.

The fourth, when a Theft is committed, or some other Damage is done in a Ship or Stable, by those employed either in the Ship or the Stable.

TITLE VI. Of Actions.

As Law relates to Persons, Things, and Actions, there remains to me to explain the third Object of the Law which consists in *Actions*.

Action, is a Right of demanding and pursuing in a Court of Judicature what is any Man's Due.

It is called *Right*, *i. e.* a Remedy of the Law: Then of pursuing in a Court of Judicature, *i. e.* in the Disquisition of a just Cause, from the Part of the Actor and of the Culpable before a Judge, in order to put an End to Law-suit.

Actions are divided, by *Justinian*, into two general Kinds; *real*, or those against the Thing; and *personal*, or those against the Person. — For whoever brings an Action, either does it against one obnoxious to him, in respect either of Contract, or Offence; in which Case *Actions* against the Person, which require the Party to do or give something; or he does it against one not obnoxious, yet with whom a Controversy is risen touching some Matter; as if *Caius* holds a Field, which *Julius* claims as his Property, and brings his *Action* for the same.

In common Law, from the two Classes of *real* and *personal Actions*, arises a third, called a *mixed Action*, which regards both the Person and Thing.

Real Action, is that whereby the Defendant claims Title to Land, or Tenements, Rents, or Commons, in Fee-Simple, Fee-Tail, or for Life.

Note, That *Fee* is an Estate, or Lands and Tenements which we hold in perpetual Right, on Condition of an Acknowledgment of Superiority in a higher Lord.

Fee-Simple, is that whereof we are seized to us and our Heirs for ever.

Fee-Tail, is that whereof we are seized, with Limitation to us, and the Heirs of our Body. — *Fee-Tail* is of two Kinds, *general* and *special*. — *Fee-Tail gene-*

ral, is where Land is given to a Man, and the Heirs of his Body: So that if a Man seized of such Land by such Gift, marry one or more Wives, and have no Issue by them, and at length marry another, by whom he hath Issue, this Issue shall inherit the Land. — *Fee-Tail special*, is where a Man and his Wife are seized of Lands to them, and to the Heirs of their two Bodies; where in Case the Wife dye without Issue, and he marry another by whom he has Issue, this Issue cannot inherit the Land. — This *Fee-Tail special* has its Origin from the *Stat. of Westm. 2. c. 1.* Before that Statute, all Land given to a Man, and his Heirs, either general or special, was reputed in the Nature of a *Fee*; and therefore so firmly held to him, that any Limitation notwithstanding, he might alienate it at Pleasure. For Redress of which Inconvenience, the Statute provides, that if a Man gives Land in *Fee*, limiting the Heirs to whom it shall descend, with a Reversion to himself, and his Heirs, for the Default of such former Heirs; that the Form and Meaning of such Gift shall be observed.

But *real Actions*, formerly so numerous and considerable, as Writs of Right, of Entry, &c. with their Appendages, as grand Cape, petit Cape, Receipt, View, Aid-Prayer, Voucher, Counter-Plea of Voucher, Counter-Plea of Warranty, and Recovery of Value, are now much out of Use; by reason of the usual Admixture of personal Matters therewith, which change them into mix'd *Actions*.

Personal Action, is that which one Man has against another, on Account of a Contract for Money, or Goods; or of an Offence done by him, or some other Person for whose Fact he is answerable.

Mix'd Action, is that laid indifferently for the Thing detained, or against the Person of the Detainer; being thus called, because it has a mixed Respect both to the Thing and to the Person. — Others better define it, a Suit given by Law, to recover the Thing demanded, and Damages for the Wrong done: Such is Assize of novel Disseisin, which if the Disseisor makes a Feoffment to another, the Disseisee shall have against the Disseisor, and the Feoffee, or other Tertenant, to recover, not only the Land, but the Damages also. — And the like in *Action* of Waste, *Quare impedit*, &c.

Note, That *Disseisin* is an unlawful dispossession of a Man of his Land, Tenement, or other immoveable, and incorporeal Right. — *Disseisin* is of three Sorts, viz. *simple Disseisin*, committed by Day, without Force and Arms; and *Disseisin by Force*, when several Persons have a Right to Lands, as common Heirs, and one entering first, keeps out the others; that Person is called *Deforfeor*, who differs from *Intruder*, in that a Man becomes *Intruder* by a wrongful Entry only into Lands void of a Possessor; whereof a *Deforfeor* holds out the rightful Heir. — And *fresh Disseisin*, which is a *Disseisin* made by him who once before was found and adjudged to have disseised the same Man of his Lands or Tenements; for which there lies a special Writ, called a *Writ of Reddisseisin*: or a *Writ* given by the Statute of *Westminster*, for him who having recovered Lands or Tenements, by *Præcipe quod reddat*, upon Default of Reddition, is again disseised by the former Disseisor: This last *fresh Disseisin*, is called *post Disseisin*. — *Wrongful Force*, makes no Descent in Law. — *Assizes*, are called *Writs of Disseisin*, which lie against Disseisor in any Case; whereof some are termed *little Writs of Disseisin*, as being vicontial, that is, suable before the Sheriff in the County Court, because determinable by him without Assize. — *Disseisor*, is he who disseiseth, or puts another out of his Land; as *Disseisee* is he who is so put out.

Actions, are also divided into *civil* and *penal*. — *Civil Action* is that which only tends to the Recovery of what, by Reason of a Contract, or other like Cause, is a Man's Due. — As if a Person, by *Action*, seek to recover a Sum of Money formerly lent, &c.

Penal Action, aims at some Penalty upon the Party sued; either corporal, or pecuniary. Such is the *Actio Legis Aquiliæ*, in the Civil Law; and in *England*, the next Friends of a Man, feloniously slain, or wounded, shall

shall pursue the Law against the Offender, and bring him to condign Punishment.

Action, is also distinguished, as it lies for the Recovery either of the simple Value of the Thing challenged, or of the double, triple, quadruple, &c. Thus a *Decies tantum* lies against Embracers; and against Jurors that take Money for their Verdict, of either or both Parties.

Note, That a *Decies tantum*, is a *Writ* so called from its Effect, which is to recover ten Times as much as the Juror, or Embracer took.

Embracer is he, who when a Matter is in Trial between Party and Party, comes to the Bar with one of the Parties, (having received some Reward so to do) and speaks in the Cause, or privately labours the Jury, or stands there to overlook, awe, or put them in Fear. The Penalty hereof is 20*l.* and Imprisonment at the Justices Discretion.

To this Class also belong all *Actions* on a Statute that punishes an Offence by Restitution, or Fine, proportionable to the Transgression.

Action, again, is divided into prejudicial, called also *preparatory* and *principal*.

Prejudicial Action, is that which arises from some Question, or doubtful Point in the principal one. As if a Man sues his younger Brother for Land descended from his Father; and it be objected he is a Bastard: This Point of Bastardy must be tried, before the Cause can proceed: Whence the *Action* is termed, *Præjudicialis, quia prius judicanda*.

Action, again, is either *ancestral*, or *possessory*.—*Ancestral Action*, is that which we have by some Right descending from our Ancestors.—*Possessory*, sometimes also called *personal Action*, is that which hath its Beginning in, and from ourselves.

Action upon the Case, is a general Action given for the Redress of a Wrong done any Man without Force, and not especially provided for by the Law: This, of all others, is now most in Use. Where there arises an Occasion of Suit, that has neither a fit Name, nor certain Form already prescribed; the Clerks of the Chancery, antiently, conceived a proper Form of *Action*, for the Thing in Question, which was called an *Action upon the Case*; by the Civilians, *Actio in factum*.

Action upon the Statute is a *Writ*, or Action brought against a Man, upon an Offence against a Statute, whereby an Action is given that did not lie before. Thus, where one commits Perjury to the Prejudice of another, he who is damaged shall have a *Writ* upon the Statute, and a Cause accordingly.

Action popular, only differs from an Action upon the Statute, in that where the Statute gives the Suitor *Action* to the Party grieved, or otherwise to one single Person certain, it is called *Action* upon the Statute; and where the Authority is given by the Statute to every one that will so sue, it is an *Action popular*.

Perpetual Action, is that whose Force is not determined by any Period or Term of Time.—Of this Kind were all Civil Actions among the antient Romans, viz. such as arose from Laws, Decrees of the Senate, and Constitutions of the Emperors; whereas *Actions* granted by the Pretor died within the Year.

We have also *perpetual* and *temporary Actions* in England, all being perpetual which are not expressly limited.

Divers Statutes give Actions, on Condition they be pursued within the Time prescribed.—Thus the Statute of 1 Edward VI. gives *Actions* for three Years after the Offence committed, and no longer. And the Statute of 7 Henry VIII. c. 3. does the like four Years; and that 31 Eliz. c. 5. for one Year and no more.

But as by the Civil Law no *Actions* were so perpetual, but that by Time, they might be prescribed against, so in the English Law, though *Actions* be called *perpetual*, in Comparison of those that are expressly limited by Statute; yet is there a Means to prescribe against real Actions, after five Years, by a Fine levied, or a Recovery suffered.

Action of a Writ, is when a Person pleads some Matter, whereby he shews that the Plaintiff had no just Cause to have the *Writ* brought, though it be possible he might have another *Writ* or *Action* for the same Matter.

Such Plea is called a *Plea to the Action of the Writ*.—When by the Plea it appears, that the Plaintiff has no Cause of any *Action* for the Thing demanded; it is called a *Plea to the Action*.

All *Actions* of Debt, on the Case, for Account (except such as concern Merchandize) Trespass, Retinue, Trover, and Replevin, shall be brought within six Years after the Cause of Action, and not after.—*Actions* of Trespass and Assault, Battery, Wounds, and Imprisonment, within four Years after the Cause of Suit; and *Actions* of Slander, within two Years after the Words spoken, and not after.

But the Right of *Action* in those Cases is saved to Infants, Feme-coverts, Persons *non compos mentis*, and such as are under Imprisonment or beyond Sea; so as they commence their Suits within the Time limited, after their Impediments are removed, &c. and where the Plaintiff's Judgment is reversed for Errors, or a Verdict passes for him, and it is given against him in Arrest of Judgment, &c. in such Case the Plaintiff may commence a new Action within a Year after such Judgment reversed, or given against the Plaintiff, &c. Stat. 21. Jac. 1.

The Statute of *Limitations* is not pleaded to an Account current, but only to an Account stated: And the Exception in the Statute as to Account concerning Merchandize, extends to Accounts current only between Merchants; for when an Account is stated and balanced, Debt lies, and the Action must be brought within six Years. 1 Mod. 70. 268.

If the Consideration of a Promise is executory, or Money is to be paid on the Request of the Plaintiff, &c. it is not material when the Promise was made, but when the Cause of Action did arise, which may be pleaded by the Defendant. And where Words spoken are actionable only in Respect of the special Damage, which happens after the Speaking; in such Case, if the Damage is seven Years afterwards, it is no Bar: But where Damage arises on the first speaking of the Words, the *Action* is to be brought within two Years, as required by the Statute, otherwise the Party will be barred, Sid. Rep. 95.

A fresh Promise will revive an Action, barrable by the Statute of Limitations; and so it is of an Acknowledgment, because that is Evidence of a Promise.—And a *Writ* of *Latitat* taken out, entered, and filed, and continued, is an Avoidance of the Statute; for it is a Demand, and a good bringing of an Action, within the Time limited by the Statute.

If a Plaintiff is beyond Sea, when the Cause of Action doth accrue, he may bring his Action at his Return; but if the Defendant be gone beyond Sea, and the Plaintiff here, he must file an Original against the Defendant, and continue it till he returns; and if he do not file an Original, or outlaw the Defendant, the Statute of *Limitations* will bar him, 2 Salk. 420. But the Law is now altered, by Statute 4 & 5 Ann. c. 16.

Actions may be brought against all Persons, whether attainted of Treason or Felony, convict Recufants, outlawed, and excommunicate Persons, &c.—But a Man attainted of Treason or Felony, a recufant Convict, an Outlaw, excommunicated Person, Convict of *Præmunire*, an Alien, Enemy, &c. cannot bring an *Action*, till Pardon, Reversal, Absolution, &c. though Executors or Administrators being outlawed may sue in the Right of the Testator or Intestate, not their own Right; and it has been held that an Alien born, has Capacity to sue personal *Actions*, but not real *Actions*.

But to enter into a more particular Detail of Actions, I'll begin by *Action of Debt*.

Action of Debt, lieth where a Man oweth to another a certain Sum of Money, upon Bond, Bill, or other Action or Contract, or on a Lease reserving Rent, &c. and the Debtor will not pay the Debt at the Day agreed, then the Creditor, or Landlord of such Person, shall have *Action of Debt* against him for the same.

Note, That Debt is a Thing due to another, whether consist of Money, Goods, or Services. We meet with different Kinds of Debts: *Active Debts*, are those whereof a Person is Creditor: *Passive Debts*, those whereof he is Debtor.—There are also *real Debts*, &c.

several Debts, and mixed Debts. Chirographical Debt, in the French Law, is that due by Virtue of a Note, or Writing under one's Hand, and not proved in Judicature. *Hypothecary Debt*, is that due in Virtue of some Contract or Judgment. *Prædial Debt*, is that arising from an Alienation of Lands, &c. the whole whereof has not been paid. *Privileged Debt*, is that which must be satisfied before all others; as the King's Tax, &c. By the English Law, Debts due to the King are to be satisfied in the first Place in all Cases of Executorship, and Administratorship; and till the King's Debt be satisfied, he may protect the Debtor from the Arrest of any Creditor.

An *Action of Debt*, is sometimes grounded upon an Act of Parliament, Judgment, Statute, &c. sometimes on a Writing, as an Obligation, Covenant, or other Speciality, Accounts stated, &c. and sometimes without Writing, as upon verbal Contracts, Receipts, Escapes of Persons, Amerciaments in a Court-Leet, or Court-Baron, &c. and if Money be due upon a Speciality, *Action of Debt* only lies; for no other Action may be had for it.

The *Action of Debt* must be brought by, and in the Name of the Party to whom the Debt is due, if he be living; and after his Death, of his Executors or Administrators, &c. and it is to be brought against the Party that originally ow'd the Debt, or after his Death, against his Executor who has taken upon him the Executorship, or if there be no Executor, against the Administrator of the Deceased, &c. but it lies not against Executors upon a simple Contract made by the Testator.

If the Debt be above 40 s. the Action will lie in the *Kings-Bench*, or *Common-Pleas*, or other superior Courts that have Jurisdiction: And if the Debt be under that Sum, the proper Courts are the *County Court*, *Court Baron*.

Debt lieth against the Husband for Goods sold, and delivered to the Wife. — If a Woman sole be indebted, and then takes Husband, it becomes the Debt of the Husband and Wife, and both are to be sued for it in Action of Debt.

A Wife cannot in Strictness bind her Husband by Contract for Necessaries, to charge him without his Assent; but usually if she buys Goods for herself, as Apparel, &c. or for her Family, the Contracts are allowed; and the Husband is bound to maintain his Wife in Necessaries, except it be in Case of an Elopement. As a Man is not bound by his Wife's Contract, without Notice and Assent; so he is not bound by her Receipt for his Money: And Necessaries for the Wife, for which the Husband is chargeable in *Action of Debt*, must be according to his Degree and Estate.

In Actions of Husband and Wife, Damage is to be laid only to her Husband: And in Actions against them, Execution must be awarded against him. A Wife may be indicted without her Husband for her own Offence, and be fined, &c. as she may sue, and be sued in Court-Christian without him.

Note, That Court-Christian is the Ecclesiastical or Bishop's Court, in Contra-distinction to civil Courts, which are called King's Courts, *Curia Regis*.

If a Man has a Servant known to be such, and he sends him to Market to buy or sell, his Master shall be charged in Debt: But if the Servant makes a Contract in his Master's Name, the Contract will not be binding, unless it were by the Commandment or Assent of the Master. And where a Servant borrows Money in his Master's Name without Order; or if he buys Things in his own Name, the Master shall not be charged, except the Thing bought comes to his Use, and he have Notice of it.

It has been adjudged, that where a Servant usually buys Goods for his Master, upon Trust or Credit, and takes up Things in his Master's Name, but for his own Use, the Matter is liable in an *Action of Debt*; but it is not so, where the Master usually gives him ready Money: And if a Master gives a Servant Money to buy Goods for him, and he converts the Money to his own Use, and buys the Goods on Trust, yet the Master is answerable, as the Goods come to his Use, otherwise he is not. Also a Note under the Hand of a Servant or

Apprentice, shall bind his Master, where he is allowed to deliver out Notes, though the Money is never applied to the Master's Use: But if he is not allowed or accustomed to deliver out Notes, his Note shall not bind the Master, if the Money be not applied to the Use of the Master.

An Infant is liable to pay for his Meat, Drink, Cloaths, Physick, Teaching, and other Necessaries; but if he enters into a Bond for it, or comes to an Account, an *Action of Debt* shall not lie against him upon the Account stated, and he may avoid the Bond by pleading *infra Ætatem*, 18 Ed. IV.

Infants are not obliged to pay for Cloaths, but where it is averred for their own Wearing, and that they were convenient and necessary for them to wear according to their Estate and Degree. An Infant may buy, but cannot borrow Money to buy Necessaries; for the Law will not trust him with Money, but at the Peril of the Lender, who must lay it out for Necessaries, or see it thus laid out.

A Demand must be made, before an Action be brought, in all Debts, except it be by Bond; yet where there is a Debt or Duty, which the Law makes payable on Demand, no Demand need be made; but when there is no Duty till Demand, a Demand must be had to make the Debt. The bringing an Action of Debt for Money due on a Bond, is a Demand, in Law, of the Debt.

The Obligor, or his Servant, &c. may tender the Money due on a Bond to save a Forfeiture; and it shall be adjudged a good Performance, if made to the Person of the Obligee, though refused by him. But if the Obligor be afterwards sued for the Debt, he must plead that he is still ready to pay it, and tender the Money in Court. It is otherwise if a collateral Thing is to be done, as where one is to deliver a Horse, &c. for if the Obligor offers to do it, and the Obligee refuseth it, the Obligation will be discharged for ever.

In Debt on single Bill, the Defendant may plead Payment (before the Action brought) in Bar; and pending an Action on Bond, &c. the Defendant may bring in Principal, Interest, and Costs, and the Court shall give Judgment to discharge the Defendant.

If several Persons are bound severally in a Bond; the Obligee may bring Action of a Debt against all the Obligors together, or all of them apart (but not against some jointly, and not the rest) and have several Judgments and Executions; but he shall have Satisfaction but once; and if it be of one only, the rest are discharged. Dyer 9. — In a joint Obligation, in Case one be sued, he is not obliged to answer, except the rest are also sued. Ibid. 310.

Action of Account, is a Writ or Action, which lies against a Bailiff, or Receiver, &c. who by Reason of their Offices and Businesses, are to render Account but refuse to do it.

A Person may have a Writ of Account against a Man as Bailiff or Receiver, as if one receives Money for my Use, I shall have Account against him as Receiver, &c. So if a Man enters into Land for my Use, and receives the Profits thereof, I shall have an Account against him as Bailiff.

If a Person receives Money due to me upon an Obligation, or for Rents owing unto me, I may either have *Action of Account* against him, as my Receiver; or *Action of Debt*, or on the Case, as owing me so much Money that he has received.

The Statute of Limitation does not bar a Merchant from bringing *Actions of Account* for Merchandize at any Time; tho' all other *Actions of Account* are within the same. And by the 13 Stat. Ed. I. c. 11. in *Actions of Account*, Auditors are to be assigned, and if the Accomptant be found in Arrear, the Auditors may commit him to Prison, there to remain till he makes Agreement with the Party; but if he be charged with more Receipts than he ought, or be not allowed reasonable Expences, he may sue out of the Chancery, a Writ *ex parte talis*, directed to the Sheriff, to take four Mainpernors to bring in his Body before the Barons of the Exchequer, at a certain Day, and to warn the Lords to appear at the same Time, &c. The Auditors are Judges of Record, though what may be pleaded in Bar to the Action, shall not be permitted to be pleaded before the Auditors; the Plaintiff or Defendant may join Issue, &c. before Auditors, which shall be certified to the Court, and there tried: And the

the Auditors may grant a further Day to the Defendant to account; but if the Defendant is remiss, they must certify the Court that he will not account.

The usual Pleas in these Actions are *quod nunquam fuit Receptor, plene computavit, &c.* And the Judgment is, *quod computet*; on which the Defendant is taken by *Capias ad computandum*; if two Persons are adjudged jointly to account, and one discharges himself upon the Account, it shall be a Discharge to the other. It is no Plea in an Accomptant that he was robbed; but he may plead it was without his Default or Negligence, and it will be good.

Action of Detinue, is an Action for Recovery of Goods or Chattels, lent and deliver'd to another to keep, or to deliver over to a third Person, who refuseth to re-deliver them.

Action of Detinue, lieth for any Thing certain and valuable, wherein one may have a Property or Right; as for a Horse, Cow, Sheep, Cloath, Household-stuff, Jewels, Plate, Bags of Money seal'd, Chests of Money lock'd, Sacks of Corn, Loads of Wood, &c. and for Boxes of Charters or Writings, &c. But it must be laid so certain, as the Thing detain'd may be known and recover'd; and therefore for Money out of a Bag, or Corn out of a Sack, &c. it lieth not, because the Money or Corn cannot in this Case be distinguished from another Man's Corn or Money; so that the Party must have an Action on the Case, &c. Yet *Detinue* may be brought for a Piece of Gold of the Price of 25 s. though not for 25 s. in Money; for here is a Demand of a certain particular Piece.

If Goods are taken out of the Possession of a *Feme Sole*, and she marries and dies, the Husband shall not have *Detinue*, except he be made Executor to the Wife; but where there is a Divorce between a Man and his Wife, after the Divorce she may bring *Detinue* for the Goods given with her in Marriage; so she shall have it for a *rationable Part. Boner.* where the Custom gives the Writ.

If a Man bargain and sell Goods, upon Condition to be void if he pays the Bargainee a certain Sum of Money at a Day; now if he pays the Money, he may have *Detinue* for the Goods, tho' they come not to the Bargainee's Hands by Bailment, but by the Bargain and Sale.

In *Actions of Detinue*, he that brings the Action ought to have a Right to, or a Property in the Thing demanded, or he must be chargeable over to some other for the same; the Thing is to be once in the Possession of the Defendant, which is not to be alter'd by Act of Law, as Seizure in Execution, &c. and the Nature of the Thing must continue without Alteration, to entitle this Action; so that if Leather be made into Shoes, &c. the Writ of *Detinue* will not lie. To bring *Action of Detinue*, the Plaintiff must set forth the Thing deliver'd, and Time when, to what Use it was deliver'd, and the Time appointed for Re-delivery, with its Value, &c.

The Defendant cannot wage Law upon a *Detinue* of Writings, concerning the Inheritance of Lands, nor of an Indenture of Lease for Years; but in *Detinue* upon Bailment, *per auter mains*, he may wage his Law, because the (Debt, &c.) *Destinèd*, is the Ground of the Action. Also the Defendant may wage his Law in *Detinue*, in almost all Cases, touching Goods and Chattels; to prevent which, the Practice now is to bring *Trover* for such Goods, &c. where the Conversion changes the *Detinue* to Action of the Case, and the Defendant cannot wage his Law, &c.

Trover and Conversion is a special Action of the Case, which a Man may have against one, who having found any of his Goods, refuseth to deliver them upon Demand; or if another has in his Possession my Goods, by Delivery to him, or otherwise, and he sells or maketh Use of them without my Consent, this is a *Conversion* for which *Trover* lies.

If a Defendant comes to the Possession of Goods by finding, Denial is a *Conversion*; but if he had them by Delivery, it is only Evidence of *Conversion*; and in both Cases the Defendant has a lawful *Conversion*, either by finding or Delivery, and where the Possession is lawful, there must be a Demand and Refusal, to make a *Conversion*; though if the Possession was tertious, as if the Defendant takes away the Plaintiff's Hat, &c. the very

Thing is a sufficient Proof of the *Conversion*, without any Thing further.

After Demand and Refusal, if the Defendant tender the Goods, and the Plaintiff refuses to receive them, that will go only in Mitigation of Damages, and the Plaintiff may have *Trover* still; for *Trover* and *Conversion* lies for Goods, though they come into the Possession of the Plaintiff before the Action brought, which does not purge the Wrong, or make Satisfaction for the Detainer, &c.

A Plaintiff may chuse to have his Action against the first Finder of the Goods, &c. or any other who gets them afterwards; and an Executor may bring this Action for the Goods of the Testator.

A Man puts out Cattle to Pasture, and then sells them, the Buyer may have *Trover* against the Farmer, &c. if he refuses to let them go till paid for; and his Remedy must be by Action for the Money due to him for depasturing the Cattle; for he may not detain them for a Debt, as in Case of an Inn-keeper or Taylor, &c. for Things in their Custody.

In Action of *Trover*, the Plaintiff surmises that he lost such and such Goods, and that the Defendant hath found them, and converted them to his own Use at such a Place; but the losing is but a mere Suggestion and not material; but if the Plaintiff deliver'd the Goods to the Defendant, or if they were taken in the Plaintiff's Presence, &c. this Action lies if there be a *Conversion*, which is the Point of the Action, and therefore it must be particularly alledged.

The Defendant may plead not guilty in *Trover* and *Conversion*, and gives in Evidence, that he restrained the Goods, and detained them till he was paid; but he cannot plead, especially that he took the Goods, or that he detain'd them, &c. for he ought to plead Not guilty, to the Wrong supposed, and give the Matter in Evidence. It is said to be allowable in two Cases, to plead specially, where you may plead the general Issue, *viz.* when the Defendant in his Plea, does admit some Colour of Action to be in the Plaintiff, but shews some special Matter to avoid it: Or where he pleads Matter of Law, which admits the Fact, but is not proper for a Jury, though it amounts to Not guilty; as a Release pleaded is a Bar in Law, yet may be given in Evidence, &c. and in other Cases, there may be a good Plea in Justification.

In this Action the Things, their Nature and Value are to be shewn, and the Time and Place, when and where the Plaintiff was possessed of them, and how they came to the Defendant with the *Conversion*.

Action of Slander, is an Action brought for defaming a Person in his Reputation, and lies for Words spoken which affect a Man's Life, Liberty, Office, Trade, or that which tends to Loss of Preferment in Marriage, Service, &c. or to his Disinheritance, or which occasion any particular Damage.

There are many Branches or Divisions of this Action, which is no more than an Action on the Case for Words, &c. and where any Words are maliciously spoken of another, for which, if true, they would touch his Life, or he might be punished; as to call one *Traitor*, *Robber*, *Felon*, &c. Action lies.—To say of another Person he has committed or spoke Treason, hath forged the Great Seal, or that he is a Coiner of false Money, &c. are actionable: But not for calling a Man Rebel, because it may be in a Commission of Rebellion.—For saying of another that he has killed or concealed the Murder of such a Man, Action lies; but the Defendant may shew that the Party is or was alive at the speaking of the Words, and then no Action lies thereon.

To charge a Man with Sacrilege or Church-robbing, or with having committed Robbery on the Highway; so to call one *House-robber*, *Horse-stealer*, &c. and to charge him with having stolen Goods, &c. as well concerning petit Larceny, where the Value of the Goods is under 12 d. As for grand Larceny, when they exceed that Value, Action lies: But Words must import a certain Charge of Felony, and not be of cutting and taking away standing Corn, Apples from Trees, Wood, &c.—This Action will generally lie for calling a Man Thief; unless something of Qualification be coupled to prove the Thing to be no Felony; and for charging him to

be a *Maintainer of Thieves, Receiver of stolen Goods, &c.* So for Conspiracy to indict a Person falsely and maliciously of Felony, or other Offence on his Acquittal, &c. though if upon Trial it appears that there was probable Cause for the Indictment, no Action lies.—To say one is a *Pirate or Maintainer of Pirates*, is actionable; and so it is to say of one that he did *burn a dwelling House, or a Barn with Corn, &c.*—Calling a Person generally *Rogue, Knave, &c.* or say he will prove him to be a *Rogue*, except it be in such an Affair, &c. it will bear no Action.

To charge a Man with a *Rape*, or that he did ravish, or was guilty of *ravishing E. B.* or say he should have been hanged for a *Rape, &c.*—And charging a Person with *Sodomy, or Buggery, &c.* being very penal by the Law, are actionable. If one says to another thou art a *buggering Rogue*, and I could hang thee; or if a Man says, I know myself and I know you, I have never committed *Sodomy*, Action lies.

To say a Man has *forged a Lease, Release, Obligation, &c.* or that he is a *Forger of false Deeds*, this Action will lie.—And to say of a Person he *has perjured himself*; that *he would prove him perjured*; or that he was forsworn in the Court of Chancery, King's Bench, &c. are actionable: But not to call a Person forsworn Man, unless it be said in a Court of Record. If a Man says, he gave another Money for forswearing himself, or calls him perjured Knave, Action lies: And this Action may be brought where the Words charge the Party with Subornation of Perjury, &c.

Such Words as charge a Person with *Bribery, Extortion, Maintenance, &c.* all which are punishable by the Common and Statute Laws, and affects a Man's Liberty and Estate, is actionable.

To say an *Alehouse-keeper keeps a Bawdy-house*, Action lies; but to say of an Inn-keeper, that he harbours Rogues, &c. it is not actionable, for his House is common to all Guests: But to say, that he harbours none but Rogues, Thieves, &c. and keeps his House for no other Use, must be actionable; since it deters others from resorting thither.

For calling a Man *Whore-master*, or a *Woman Whore*, no Action lies; for these are merely spiritual Slanders: But calling a Woman Whore in *London*, is actionable by the Custom of the City. And to say of a Man that he is a common Whore-master, that he lay with a certain Woman, &c. or that he is a drunken Fellow, and worth nothing, &c. by which he loses his Marriage, this Action lies.—Also to say that a Woman has a Bastard, or is with Child; that she lay with *A. B.* or that a certain Person has the Use of her Body, &c. whereby she loses her Marriage, is actionable; though not without special temporal Damage, an Action at common Law.

Defamation by Libel, as by scandalous Writing, Signs, &c. is actionable: And Printing or Writing may be libellous, though the Scandal is not charged in direct Terms, but ironically; or though there be only the first and last Letter of the Name, if the Jury will find it to point out a particular Person.—Sending an abusive Letter to one, without publishing it, is no *Libel*; but if it be any Ways dispersed; or if a Man writes a Letter, containing scandalous Matter against another, and send it to a third Person, this may be a *Libel*.—If one reads a *Libel* it is no Publication; but if he repeats the same in the Hearing of others, it is; though if it be read or repeated in Mirth, without any malicious Purpose of Defamation, it is no Offence: So if one takes a Copy of the *Libel*, and doth not deliver it to others, &c.—The Contriver, Procurer, and Publisher of a *Libel*, knowing it to be such, are punishable; as are also Booksellers who sell *Libels*, although they know not the Contents.

A Libeller shall be punished, although the Party of whom the Words be spoken be dead; and though the Matter of the *Libel* is true; for it is not material whether it be true or false, if the Prosecution be by Indictment or Information: But in Action of the Case, one may justify that it is true.

Note, That a *Libel* is a Writing, containing Injuries, Reproaches, or Accusations against the Honour and Reputation of any Person, particularly of a Superior or Governor. *Platina* is of Opinion, that a Writing,

how injurious soever it is, cannot be called a *Libel*, if the Author's Name be to it.—*Libellers* among the ancient *Romans* were punished with Death, but in after Times they were only whipped. *Augustus* ranked *famosos libellos*, defamatory *Libels*, among the Crimes *Læse Majestatis*, of High-Treason.—*F. Baldwin* has published a Comment on the imperial Laws against *Libels*.—Scandalous Pictures are reckoned among *Libels*.

A *Libel*, the Lawyers say, may be either *in scriptis*, or *sine scriptis*: *In scriptis*, when a Writing is composed or published to another's Disgrace, which may be done either *verbis* or *cantilenis*; as where this is maliciously repeated or sung in the Presence of others; or else *traditione*, when the *Libel* or any Copy of it is delivered out to scandalize the Party.—A *Libel sine scriptis* may be twofold. 1. *Picturis*, as to paint the Party in a shameful or ignominious Manner: Or, 2. *Signis*, as to fix a Gallows or other ignominious Signs, at the Door of the Party, or elsewhere.—The Punishment of *Libels* in *England*, is putting the Criminal in the Pillory, Whipping, Fining, &c.

As to the Slander of Persons by Words, though scandalous Words be spoken before a Man's Face or behind his Back, by Way of Affirmation or Report, of Opinion or Dream, in Earnest or Jest, when sober or drunk, &c. they are actionable: It is the same if the Words are spoke directly or indirectly, or obliquely; and although they are uttered in any Language, if understood by the Hearers; and Words may be actionable in one County that are not so in another, by different Acceptation, &c. But where Words may receive a double Interpretation, they shall be taken in *mitiori sensu*, so as no Action shall lie: And if the Defendant can make Proof of the Words, he may plead special Justification; though if the Plea be not made good, Damages will be aggravated.

In *Action of Slander*, the Nature of the Words must be observed, the Manner of speaking them, the Time and Place, when and where spoken, and before whom, and the Damage thereby to the Plaintiff; what his Credit was, and how impaired, with the aggravating Circumstances.—It matters not whether the Plaintiff doth in his Declaration set forth all the circumstantial Words as they are spoken, so as he shew the very Words as they are actionable; wherein he must be very careful, for a little Variance may vitiate all; and such as doubt the Words, do sometimes charge the Defendant with speaking them variously at several Times, and several Ways, that in one of the Charges they may hit upon the very Words, or the Substance of them: But then the Jury are to assess Damages only for the Words that are found to be spoken.

When the Words are utterly uncertain in themselves, no *Innuendo*, or Averment, can make them good; but otherwise it is, if it may be known what Person the Speaker did intend: And if the Declaration be laid, that the Defendant *dixit* the Words, and say not of the Plaintiff, it is nought.—If a Slander concerns Life or Member, an Office, Trust, Calling, &c. the Plaintiff need not aver any particular Damage; in other Cases he must aver it specially.

To these *Actions* the Defendant may plead the general Issue, not guilty; or if the Plaintiff declares on some of the Words only, when altogether are not actionable, he may set them forth at large as he spoke them, and *traverse* or justify the whole, or plead not guilty to the Words alledged, as the Case shall require.

Note, That *Traverse* denotes the Denial of some Matter of fact, alledged to be done in a Declaration or Pleading; upon which the other Side coming and maintaining that it was done, Issue is joined for the Cause to proceed to Trial.

Action of Scandalum Magnatum, is of a superior Nature to the ordinary Action of Scandal on the Case, for Slander of a Nobleman, &c. and it is laid, *tam pro Domino Rege, quam pro seipso*, the Thing being supposed to concern the Credit of great Men, who act by his Authority; and as the Plaintiff may bring this Action in the Name of the King, and in his own Name, he shall recover Damages, and the Defendant is to be otherwise punished.

Note,

Note, That *Scandalum Magnatum* denotes a Scandal or Wrong done to any high Personage of the Land, as Peers, Prelates, Judges, or other great Officers, by false or slanderous News or Tales, whereby any Debate or Discord between them and the Commons, or any Scandal to their Person might arise.

The *Action of Scandalum Magnatum*, is founded on Statute of *Westminster*, 1. c. 33. 2 R. II. c. 5. and 12 R. II. c. 11.—Some are of Opinion, that the Words in the Case of *Scandalum Magnatum*, shall be taken in the worst Sense, to preserve the Honour of great Persons; but most of those who are really great Men, are so far above the scandalous Words spoken against them by scurrilous Fellows, who seldom do it with any other View than that of diverting the Rabble, that they think it infinitely beneath them to take the least Notice of it: Therefore we seldom see any Action of *Scandalum Magnatum* brought.—Judge *Atkins* held, that an Action would not lie for Words of a trivial Nature; the Statute mentioning only great Scandals, *whereby Discord might arise*, &c.

Action of Trespass, lies for any Wrong or Damage, which is done with Force and Arms by one Person to another; sometimes against the Person of a Man, and sometimes against his Goods and Lands, &c. and herein the Plaintiff shall recover Damages according to the Wrong done him; and the Defendant, in Strictness of Law, is to pay a Fine to the King, for the Writ always supposes the Wrong to be done *Vi & Armis*, & *contra Pacem*, &c.

Trespases against a Man's Person, are of several Kinds; viz. by *Menacing* or *Threatening* to hurt another; *assaulting* or *Setting* upon one, to beat him.—*Battery*, where any Person does unlawfully beat another.—*Maiming* of a Man, whereby he loses the Use of his Limbs or Members.—And by *Imprisonment*, where a Person is restrained of his ordinary and lawful Liberty.

If one threatens to beat or kill me, or lies in wait to do it, so I dare not follow my Business as at other Times, and I have any Loss thereby, I may have Action of *Trespass*; but not when he threatens only to sue or arrest me, &c.—If the Threatening be, that he will do me some bodily Mischief, this is an Assault.

If a Person in Anger lifts up or stretches forth his Arm, and offers to strike another; or holds up any Staff or Weapon to strike at him, being within his Reach; or thrusts or pushes a Man, casts Stones at him, though he be not hit; throws Wine in his Face, or on his Cloaths, &c. these are *Trespases* and Assaults in Law, for which Action lies: Though if one strikes at another, at a great Distance; or if it be at a Person near; or if he throws Stones at him, &c. merrily or accidentally; and not purposely, no Action will lie.

To hold a Man by the Arm, is an Assault if not a Battery; for the least touching of another in Anger is a Battery; and though Battery may not be committed by offering to strike, or attempting to beat, but generally a Stroke may be actually given, yet if one comes to the Aid of another who is beating a third Person, though he does not touch him, he is guilty of Battery; and throwing Drink, &c. in a Man's Face is a Battery, if it be not done by Accident.

If a Person be beaten by another, he may return it in his Defence, and plead that the other's Battery was occasion'd by his own Assault; and a Man may justify an Assault in Defence of his Person, or Goods; or of his Wife, Father, Mother, Master, &c. for the Maintenance of Justice.

In Cases of Assault; for the Assault of the Wife, Child, or Servant, the Husband, Father, and Master, may have *Action of Trespass*: And where any one is assaulted or beaten, and he hath no Witnesses to prove the same, the Party may bring an Information in the Crown Office, &c. A Man and his Wife may have this Action together, for any the least Beating of the Wife: But if it be such a Beating, as thereby he loses her Company, or Service, he himself may have it.

A Husband may bring Action of *Trespass*, for Assault and debauching or laying with his Wife; and *de uxore rapta & abducta cum bonis viri*, where the Wife is taken away by an Adulterer with the Husband's Goods,

&c. though *Trespass*, *quod cepit & abduxit*, lies not for the Father for taking and carrying away any of his Children, except it be a Son or Daughter who is Heir. For taking away or beating a Man's Servant, *Trespass* may be brought; but the Plaintiff must declare *per quod servitium amisit*, without which it is no Damage to the Master.

As to *Maibem*, if it deprives the Person of the Use of any of the Members of his Body, as his Leg, Hand, Finger, Eye, Fore-Teeth, &c. he may have this Action, or an Appeal of *Maibem*, and recover Damages, according to the Hurt or Injury; but if the Hurt be small, the Action of *Trespass*, Assault and Battery, is the only Remedy.

He that commands or procures a Battery to be done, is a Principal; and not only he that does the Wrong, but he who is accessory to it before or after the Thing done, may be charged as Principal by this Action.

Action of Trespass for false Imprisonment, lieth when a Man is imprisoned, and there is no just Cause for his Imprisonment; or where he that imprisons him has no good Authority to do it; or if having Authority he does not pursue it; if he arrests at a forbidden Time, or Place.—And yet where any Man is duly imprisoned by some legal Warrant, tho' in a false or feigned Suit, and no Money be due, &c. he shall have *Action of Trespass* and false Imprisonment.

Entry into a House, against the Will of the Owner, is *Trespass*.—Action of *Trespass* lies, where a Person makes an Entry on the Land of another, and does Damage.—And *Trespass, Vi & Armis*, does lie for him that hath the Possession of Goods, or of a House or Lands, if he be disturbed in his Possession.

In general, *Trespass* may be brought for breaking a Man's Close or Ground; for driving a Cart and Horses over the Ground of another Person, where there is no Way for it; for chasing Cattle, whereby they die, or are injured; for taking away Pails, and breaking off Fences of Land, or breaking the Doors, Windows, &c. of a House; for fishing in another Man's Pond, and for breaking the Pond; for eating the Corn of another with Cattle; for digging in any Man's Coal Mines, and carrying away the Coal; for plucking up Garden-Roots and Herbs; for tearing a Bond, &c. All Persons, Male or Female, Infants, &c. that do any such Wrong, may be sued in this Action.

In all *Trespases* there ought to be a voluntary Act and a Damage. If the Defendant in a *Trespass*, *Quare clausum fregit*, disclaims any Title to the Land, and the *Trespass* is involuntary or by Negligence, he may be admitted to plead a Disclaimer and Tender of Amends before the Action brought, &c. and if it be found for the Defendant, the Plaintiff shall be barred. Where a Defendant justifies for a *Trespass*, he must confess it; and a Defendant shall never be excused in *Trespass*, unless it be upon an inevitable Necessity. If there be only a Force in Law, the Party must be required to go out of the Land, &c. before Hands may be laid on him as a *Trespasser*; but it is otherwise where there is an actual Force.

If the Defendant makes the Place where the *Trespass* was done material by his Plea, he must shew it with great Certainty.

A Man may have an Action of *Trespass* for divers *Trespases*, and one Action of *Trespass* may be brought for a *Trespass* committed in several Towns or Parishes, if they are in one and the same County, for else they cannot receive one Trial, as they are local Causes of Action, triable in the County where they are done.—If divers Actions of *Trespass* are brought for the same Cause, the Defendant may get them joined into one, if brought to vex him; but the *Trespases* must not be of several Natures, which may not be tried in one Action. *Trespases* continued may be laid with a *Continuando diversis diebus, & vicibus*; but Things must lie in Continuance, and where *Trespases* are alledged with a Continuance which cannot be continued, the Evidence ought to be to the first Act only. And the best Way to declare for such *Trespases* which lie in Continuance, is for the Plaintiff to set forth that the Defendant between such a Day and such a Day cut several Trees, &c. and not to lay a *continuando Transgressionis* from such a Day to such a Day.

and upon such Declaration the Plaintiff may give in Evidence a cutting, on any Day within those Days.

Persons maliciously maiming, wounding, or hurting any Cattle, destroying any Plantation of Trees, or throwing down Inclosures, shall forfeit treble Damages in *Action of Trespass*. But in *Trespass*, if the Jury give not 40 s. Damages, except the Title comes in question, Costs than Damages, except the Title comes in question, shall be carried away, or the Battery be well proved.—The Plaintiff, where the *Trespass* is wilful and malicious, shall recover Damages and full Costs; by the 8th and 9th of H. III. c. 11.—And where in Assault the Defendants are acquitted, they shall have Costs, unless the Judge certifies Cause for making them Defendants.

A Court, which is not a Court of Record, cannot hold Plea of *Trespass vi & armis*.—*Trespass quare vi & armis* will lie in B. R. be the Damages what they will: But in Writs of *Trespases* upon the Case, the Words *vi & armis* must not be inserted, though returnable in the Court of B. R. &c.

The *Action of Covenant lies*, where one is bound by a Covenant in a Deed, entered into by two or more Persons to do or not do some Act or Thing agreed betwixt them, when he has broke the same; and herein commonly the Party damnified shall only recover Damages for the Breach, except in real Actions.

A Covenant is either expressed in the Deed or implied by Law, as by the Words *Demise* or *Grant* of a Thing, the Law doth imply that the Lessee or Covenantor shall quietly enjoy, &c.

Covenants are real concerning the passing of Lands; or personal where a Man covenants with another to build a House, or to serve him, &c. And a *Covenant* may be conditional; if a Servant covenants to serve me a Year, and I covenant to pay him a Sum of Money for it, he may have *Action of Covenant* though he don't serve me; but then I may compel him to serve the Time agreed. It is otherwise if I covenant to pay him a Sum of Money if he serves me a Year, which is a conditional *Covenant*.

All *Covenants* between a Lessor and a Lessee, are *Covenants in Law* or express *Covenants*; and where there is an express *Covenant* in a Deed for quiet Enjoyment, the implied *Covenant* is gone. In a *Covenant* the lost Words which are general shall be restrained and expounded by the former which are special and particular; and a latter *Covenant* cannot be pleaded in bar to a former.

Covenants between Persons must be to do what is lawful, or they will not be binding; but if some *Covenants* in a Deed are good and lawful, and others not; those against Law are void, and the others stand good.—If the Thing to be done be impossible, the *Covenant* is void.

No Duty nor Cause of *Action* arises upon a *Covenant* till it is broken; if *Covenants* perpetual are once broke, and an *Action* is brought, and Recovery thereupon, upon a new Breach a *Scire Facias* shall be had on that Judgment, and the Plaintiff need not bring a new Writ of *Covenant*.

In *Covenants* the Plaintiff must have Recourse to the Deeds or Writings, and the Circumstances of Time, Place, &c. and observe what particular *Covenant* it is best to insist on, to lay the Breach right; also the Declaration must set forth how the Plaintiff comes to be entitled to what is demanded.

In Deeds of *Covenant* sometimes a Clause for Performance with a Penalty is inserted; and other Times, and more frequently Bonds are given and entered into for the Performance, with a sufficient Penalty separated from the Deed; which last being sued, the Jury must fine the Penalty; but on *Covenants* Damages only.

Covenants are generally taken more strongly against the Covenantor, and for the Covenantor, &c.

Action of Ejectment, is an *Action* where one makes a Lease to another for Terms of a Year; and a Third ousts the Lessee, then such Lessee shall have this *Action* against the Person that ousted him, and recover his Term and Damages.

Note, That ousted in the ancient *English* Law-Books is being removed or put out of Possession.

The *Action of Ejectment* partakes of the Nature both

of a real and personal *Action*; for both the Lands and Damages are recovered thereon.

The Plaintiff in *Ejectment* is a mere nominal Person, and a Trustee for the Lessor, and if he releases the *Action* he may be committed for the Contempt: And where Attornies have made Persons Lessees in *Ejectment*, who were not in Being, or known to the Defendants, they have been adjudged to pay Costs, &c.

Ejectment ought to be brought for a Thing that is certain; as if it be of a Manor, *Manerium de A. cum pertinentiis in*, &c.

In *Ejectment*, if it appears that the Plaintiff was ejected before the Lease was made, it is sufficient; though no certain Day be alledged in which it was done; for the Day is not material, being before the *Action* brought: But the Time of Entry of the Plaintiff must be shewn in the Declaration, that it may appear he was not a Disseisor, by entering on the Land before the Commencement of his Term, &c.

No Arrest is to be made in this *Action*, as commonly prosecuted; only a Declaration feigning a Lease for Years to him that would try the Title, and casual Ejector or Defendant is delivered to the Ejector, who serves a Copy thereof on the Tenant in Possession, and gives Notice at the Bottom for him to appear and defend his Title, or that the feigned Defendant will suffer Judgment by Default, &c. To this Declaration the Tenant appears by Attorney, and consents to a Rule to be Defendant in the Place of the casual Ejector, &c. and if he does not appear in due Time, and enters into such Rule, on Affidavit of Service of the Declaration, the Court orders Judgment to be pronounc'd against the casual Ejector, and thereby the Tenant is ousted of his Possession, &c.

ASSIZE, is a Writ or *Action*, directed to the Sheriff for the Recovery of Possession of Things immovable, whereof a Man's self or Ancestors have been disseized.

Littleton and others suppose these Writs of *Affize* to have given the Denomination to the *Affizes*, or Courts so called, and assign several Reasons of the Name of the Writ; as,

First, because such Writs settle the Possession, and right him that obtains by them. Secondly, because originally they were executed at a certain Time and Place appointed; for by the *Norman* Law, the Time and Place must be known forty Days before the Judges sit; and by the *English* Laws there must be fifteen Days Preparation, except they be tried in the standing Courts at *Westminster*.—But it is more natural to suppose the Writs denominated from the Courts; and that they were called *Affizes*, because antiently tried at special Courts of *Affizes*, set and appointed for that Purpose. Though of later Days, they are dispatched at the general *Affizes*, along with the Commission of *Oyer* and *Terminer*, &c.

This Writ is as well of Things corporeal or incorporeal Rights, being of four Sorts, viz.

Affize of novel Disseisin, which lies where a Tenant in Fee-simple, Fee-tail, or for Life, is lately disseized of his Lands or Tenements, Rent-service, Rent-seek, or Rent-charge, Common of Pasture, common Way, &c.

An *Affize* must be of an actual Freehold, not a Freehold in Law; and if Lessee for Years or Tenant at Will be ousted, the Lessor or he in Remainder may have *Affize*, because the Freehold was in him at the Time of the *Disseisin*.

The Court of Common-Pleas or King's-Bench, may hold Plea of *Affizes* of Land in the County of *Middlesex*, by Writ out of Chancery; in other Counties such Pleas must be tried at the Court of *Affizes*; and in these *Actions* the Land, Damages, and Costs are recovered.

In *Affize* when the Party purchases the Writ, he ought to find Sureties in the Chancery; and the Plaintiff must prove his Title, then his Seisin, and Disseisin.—The Plaintiff need not be so certain in *Affize* as in other Writs, for the Judgment is to recover *per visum recognitorum*; and if the Recognitors may put the Demandant in Possession, it is well enough: An *Affize* shall never abate for Want of Form; and it is not needful to make so exact a Title against Pernors of Profits, as against a Tenant.

The Demandant in *Affize* may abridge his Plaint after the Jury are charged, before Verdict; and if the Tenant pleads an ill Bar, the Plaintiff is not bound to answer it, but

but may make a Title at large, and pray the *Affize*, &c.

An *Affize* was formerly to be arraigned in *French*; and first the Plaintiff's Counsel prays the Court, that the Defendant may be called, whereupon he is called accordingly; and on his appearing, his Council demand *Oyer* of the Writ of *Affize*, and the Return of it, which is granted; and then he prays Leave to imparl to a short Time after, and the Jury are adjourned to that Day: At the Day given by the Court the Defendant is again called, and upon his Appearance he pleads to the *Affize*, and on this an Issue is joined between the Parties, and the Jury are sworn to try the Issue, the Council proceeding to give them their Evidence. After the Trial the Court gives Judgment, and the Plaintiff is to have a Writ of Seisin, &c.

In this Action the Defendant shall not effoin nor cast a Protection, or pray in Aid of any but the King, vouch any Stranger or Party to the Writ, unless he enters presently into the Warrant, &c. And where the *Affize* concerns the King and his Prerogative, the Judges may be prohibited to proceed therein by Writ, *De non ulterius prosequendo Rege inconsulto*.

Affize of Mort d'Ancestor, lies where my Father, Mother, Brother, Uncle, &c. dies seized of Lands, Tenements, Rents, &c. held in Fee-simple; and after their Death a Stranger abates.—It is good as well against the Abettor as any other in Possession: But lieth not against Brothers or Sisters, where there is Privy of Blood between the Person prosecuting and them; and it must be brought within the Time limited by the Statute of Limitations, or the Right may be lost by Negligence.—This Writ of *Affize* is brought and prosecuted in like Manner, as *Affize* of *Novel Disseisin*.

Affize of Darrein Presentment, lies where I, or my Ancestor have presented a Clerk to a Church, and after the Church becomes vacant by Death, or otherwise, a Stranger presents his Clerk to the same Church, in my Disturbance.

This *Affize* doth not lie for one Copartner against the other; for if they cannot agree, the Ordinary ought to admit the Presentee of the eldest.

These three *Affizes* were instituted by Henry II. in the Place of Duels; which till then had obtained on these Occasions.

Quare impedit, is a Writ which lies for him who has purchased an Advowson, against him that disturbs him in the Right thereof, by presenting a Clerk thereto when the Church is void.

It differs from the *Affize* of *Darrein Presentment*, in that it lies for him who is the Purchaser himself.—Where a Man may have the *Affize*, he may have this Writ.

The Writ *Quare impedit* is to be brought a Month after the Avoidance, and by it a Patron may be relieved, not only in his Presentation to a Church, but to a Chapel, Prebend, Vicarage, &c. And this Writ lies for a Donative, Deanary, &c. but not for any mere Office of the Church.

In *Quare impedit*, the Writ must be brought in that County where the Church is; the Patron and Incumbent are to be named in it, the one as he may be dispossest of his Patronage, and the other of his Presentation, and it is usual likewise to make the Bishop a Defendant, to prevent Lapse where the Church is void *pendente lite*.—The special Matter must be set forth in the Declaration, and it is not sufficient for the Plaintiff to say, that he, or such Persons from whom he claims, were seized of the Advowson of the Church; but he must alledge a Presentation made by one of them; for if he does not, the Defendant may demur to the Declaration; and the Defendant is to make his Right appear, by joining the last Presentation to his own Title.

Formedon, is a Writ which lies for him who has Right to Lands or Tenements by virtue of any Entail, arising from the Statute of *Westminster*, c. 1.

There are three kinds of *Formedon*, viz. a *Formedon in the Descender*, *Formedon in the Reverter*, and *Formedon in the Remainder*.

Formedon in the Remainder, lies for the Recovery of Lands, &c. given to one and the Heirs of his Body; or to a Man and his Wife, and the Heirs of their two Bodies; or to a Man and his Wife being Cousins to the

Donor in frank Marriage, and afterwards alienated by their Donee. After his Decease, his Heir shall have this Writ against the Tenant or Alienee.

Fitz. Nat. Br. fol. 211, &c. makes three Sorts of *Formedons* in the Descender; the first is that now expressed: The second for the Heir of a Coparcener that aliens and dies: The third he calls *in simul tenuit*; which lies for a Coparcener, or Heir in Gavel-kind, before Partition against him to whom the other Coparcener or Heir has alienated, and is dead.

Formedon in the Remainder, lies where a Man gives Land in tail, the Remainder to another in tail; and afterwards the former Tenant in tail dies without Issue, and a Stranger abates; then he in Remainder shall have this Writ.

Formedon in Reverter, lies for the Donor or his Heirs (whose Lands is entailed to certain Persons, and their Issue, with Condition for Want of such Issue to revert to the Donor and his Heirs) against him to whom the Donee alienates, after the Issue extinct, to which it was entailed.

In a Writ of *Formedon* the Demandant must make his *Descent* by all who did hold the Estate, otherwise the Writ will abate, and the Demandant should always be made Son and Heir, or Cousin and Heir, to him that was last seized of the Tail; but the surest Way is to make every Man named in the Writ Son and Heir therein, and it is not material whether they were seized or not, altho' they are named Heirs.

The Writ of *Formedon* is now almost obsolete, being rarely brought, except in some special Cases where it cannot be avoided.

Writ of Partition, lies for dividing of Lands descended by the common Law, among Parcenters or Coheirs where there are two at least; and Partition may be made by joint Tenants, and Tenants in common, &c.

Partition is also made four other Ways, whereof three are by Agreement, the fourth by Compulsion.

The first *Partition by Agreement* is, when the Parcenters divide the Land equally themselves into so many Parts as there are Coheirs.

The second is, when each chuses some of their Friends to make the Division for them.

The third is by drawing Lots thus; having first divided the Land into so many Parts as there are Persons, they write every Part separately in a distinct Scroll, and wrapping it up throw each into a Hat, or such like Thing, out of which each one draws according to his Superiority; and so the Land is separately allotted.

The fourth *Partition* which is by Compulsion, is when one or more of the Heirs, by reason of the Refusal of some other, sues out a Writ of *partitioe faciendi*; by Force thereof they shall be compelled to divide.

In *Kent*, where their Land is of Gavel-kind Nature, they call their *Partition* shifiting.

Note, That *Gavel-kind* is a Tenure or Custom, whereby the Lands of the Father are equally divided at his Death, among all his Sons; or the Land of the Brother among all his Brethren, if he have no Issue of his own. This Custom which antiently obtained throughout *England*, is still of Force in the greatest Part of *Kent*, *Urchensfield* in *Heresfordshire*, and elsewhere, though with some Difference: But by the Statutes 34 and 35 *Henry VIII.* all *Gavel-kind* Lands in *Wales* are made descendible to the Heir, according to the Course of common Law. In an antient Book of Record in *Christ-Church, Canterbury*, in the Time of *H. VIII.* the Saxons are said to have held all their Lands, either by Writing or without: The first was called *Bockland*, whose Owners were Men whom we now call Freeholders; the second was called *Folkland*, the Owners whereof were of servile Condition, and *ad voluntatem Domini*. Now the Inheritance or Freehold did not in those Days descend to the eldest Son, but to all alike, which in *Saxon* was called *Landescyftan*, and in *Kent* to shifit Lands: Whence came the Custom *Gavel-kind*, and the Reason why it was retained in *Kent* more than in other Places was, that the People of *Kent* upon the *Norman* Invasion, could not be reduced to surrender to the Conqueror, but on these Conditions, that they

they should retain their antient Country Customs, without any Infringement or Diminution, and especially that called *Gavel-kind*.

The Lands held under this Denomination descend equally, and are divided Share and Share alike, among the male Children, and in Defect of these among the Females. They are of Age, or qualified to take the Lands upon them at the Age of fifteen; and may then give, vend, or alienate the same to any Person, without the Consent of the Lord: And Children here inherit their Father's Lands, though convicted of Felony, Murder, &c.—The Tenants in *Gavel-kind* are to do *Fealty*, and to be in the Tuition of the next a-kin, who is next Heir after them, till fifteen Years of Age, to pay Acknowledgment to the Lord for the Land, &c.

Note, also, that *Fealty* is an Oath taken, at the Admittance of every Tenant to be true to the Lord, of whom he holds his Land.—*Fealty* is usually mentioned as synonymous with Homage; but it differs from it, as Homage consists in taking an Oath, when the Tenant comes to his Land, and is done but once; being an Obligation which is permanent, and binds for ever, which *Fealty* does not.—They differ also in the Manner of the Solemnity; for the Oath of Homage is taken by the Tenant kneeling; but that of *Fealty* is taken standing, and includes six Things, which are included in the Words, *incolume, tutum, utile, honestum, facile, possibile*.

Incolume, that he do no bodily Injury to the Lord: *Tutum*, that he do him no secret Injury in any Thing, which is for Defence, as in his House or Cattle: *Honestum*, that he do him no Injury in his Reputation: *Utile*, that he do not damage him in his Possessions: *Facile and Possibile*, that he make it easy and not difficult for the Lord to do any Good, which otherwise he might do.

He that holds Lands by this only Oath of *Fealty*, holds it in the freest Manner; for all, even those that have Fee, hold *per fidem & fiduciam*, that is, by *Fealty* at the least.

This *Fealty* is also used in other Nations, as in *Lombardy* and *Burgundy*.—Indeed as the very first Creation of this Tenure grew from the Lord for his Followers, so did it bind the Tenant to Fidelity; as appears by the whole Course of the Feuds, and the Breach thereof is Loss of the Fee.

Hottoman, in his Commentary *de verbis feudalibus*, shews a double *Fealty*; one General to be performed by every Subject to his Prince; the other Special required only of such, as in respect of their Fee, are tied by this Oath to their Lords.—We read of both in the *Grand Customary of Normandy*, &c.

Fealty special, is performed in *England*, either by Freemen or Villains: The Form of both, see *Anno Edward II.* in these Words: When a Freeman shall do *Fealty* to his Lord, he shall hold his Right-Hand upon a Book, and shall say thus; 'Hear you my Lord R. that J. P. shall be to you both faithful and true, and shall hold my *Fealty* to you, for the Land that I hold of you, on the Terms assigned; so help me God and all his Saints.'—When a Villain shall do *Fealty* to his Lord, he shall hold his Right-Hand over the Book and say thus; 'Hear you my Lord A. that J. P. from this Day forth, unto you shall be true and faithful, and shall owe you *Fealty*, for the Land that I hold of you in Villainage, and shall be justified by you in Body and Goods, so help me God and all his Saints.'

Dower, is that Portion of Lands or Tenements which a Widow enjoys for Term of Life from her Husband, in case she survives him, and which at her Death descends to her Children.

Among the *Goths* the *Dower* was only the tenth Part of her Husband's Estate; among the *Lombards* a Fourth, among the *Romans* and *Sicilians* a Third: Which is the Rate which still obtains in *England*, and amongst most other Nations.

The *English* Law-Books distinguish five Kinds of *Dower*, viz. *Dower per legem communem*; *per consuetudi-*

dem; *ex assensu Patris*; *ad ostium Ecclesiæ*; and *de la plus belle*.

Dower by the common Law, is a third Part of such Lands, as the Husband was sole seized of in Fee during the Marriage; which the Wife is to enjoy during her Life; and for which there lies a Writ of *Dower*.

Dower by Custom, gives the Wife in some Places half her Husband's Lands, so long as she lives single; as in *Gavel-kind*; and as Custom may enlarge, so may it abridge *Dower*, and restrain it to a fourth Part.

In *Dower ex assensu Patris*, and *ad ostium Ecclesiæ*, the Wife may have so much *Dower* as shall be assigned and agreed upon; but it ought not to exceed the third Part of the Husband's Lands. If this be done before Marriage it is called a *Jointure*.

Dower de la plus belle, by this she is endowed with the fairest and best Part of her Husband's Estate.

There are three Things to entitle *Dower*, viz. Marriage, Seisin, and the Death of the Husband. It is much favoured in Law, being for the Benefit of Widows; wherefore the Wife of one *non compos mentis*, of an Ideot, Outlaw, or one attainted of Felony, may be endowed; but not of a Person attainted of Treason, nor the Wife of an Alien, Jew, &c. and a Wife may be endowed of the principal Messuage (not being a Castle) Lands, &c. and of a third Part of a Reversion, expectant on a Term of Years, and the Rent reserved thereon:—Also she shall be endowed of a Seisin in Law, as well as a Seisin in Deed; as where Lands descended to the Husband before Entry the Wife shall have her *Dower* therein, though it be not reduced to an actual Possession.

At common Law the *Dower* is assigned by the Sheriff, by the King's Writ, or by the Heir, &c.—And by the antient Law of *England*, by *Magna Charta*, a Woman was to continue a whole Year in her Husband's House for the Assignment of her *Dower*; but by that Statute a Widow shall immediately after her Husband's Death, have her Marriage Inheritance, and remain in his chief House 40 Days, within which Time a *Dower* is to be assigned her of the third Part of all his Land.

In Action of *Dower*, the first Process is *Summons* to appear; and if the Tenant do not appear, nor cast an *Essoign*, a grand *Cape* lies, to seize the Land, &c.—But on the Return of the *Summons*, the Attorney for the Tenant or Defendant may enter with the Filazer, that the Tenant enters and prays *View*, &c. Then a *Writ of View* goes out, whereby the Sheriff is to shew the Tenant the Land in Question; upon the Return of which Writ, the Tenant's Attorney takes a Declaration, and puts in a Plea, which is generally *ne unques seisi*, &c. that the Husband was never seized of any Estate whereof the Wife can be endowed; and when Issue is joined, you must proceed to Trial as in other Actions.—Upon Trial, the Jury are to give Damages for the mesne Profits from the Death of the Husband, if it be found that he died seized, &c. for which Execution shall be made out; and then there goes a Writ to the Sheriff to give Possession of a third Part of the Land.

A *Writ of Replevin*, or *replegiari facias*, lieth where one doth distrain another's Cattle or Goods, for Rent, Service, Damage Feasant, &c. having first given Security to the Sheriff, that on the Delivery of the Thing distrained, he will prosecute the Action against the Person who made the Distress.

In the Statute 24 *Henry VIII.* we read of *Canes replegiari*, Hounds *replevied*, in a Case between the Abbot of *St. Albans* and *Geoffrey Childwic*.

Goods may be *replevied* two Ways; viz. By *Writ*, which is that used by the Common Law; and by *Plaint*, which is that by the Statute Law, for the more speedy having again the Cattle and Goods; and is brought in the Sheriff's Court.

Distresses are to be reasonable, and not taken on the Highway, or driven out of the Country, &c. And if any Person shall distress another, on Purpose to injure him, he shall pay treble Damages.—By Statute, when a Distress is taken in the Day-time, for Rent due, if on Notice thereof, with the Cause of Taking, &c. the Owner do not *replevy* the same in five Days, the Person distressing may, with the Sheriff, Constable, &c. cause the Distress to be appraised by two sworn Appraisers, whom

whom such Sheriff, &c. shall swear to appraise the Goods truly, &c. and may afterwards sell the same to satisfy the Rent and Charges, leaving the Overplus with the Sheriff, &c. (if any) for the Owner's Use.

If Notice be not given in Writing of the Things distrained, and for what you distrain them, they may not be sold by the Statute; but the Distress is to be retained till *Replevin* or Satisfaction. And where a Man, whose Goods are distrained, thinks himself wronged, and would have the Goods or Cattle restored, he may obtain them by *Replevin*; but if he be only desirous of a reasonable Satisfaction for them, he may have an Action of Trespass, or Trover, &c.

A *Replevin* ought to be certain, in setting forth the Number, and Kinds of Cattle distrained, or it will not be good; because if it be uncertain, the Sheriff will not know how to make Deliverance of the Cattle, if a Writ be directed to him to do it. And in a Declaration in *Replevin*, for taking of Cattle, if the Time and Place, when and where taken, be not named, the Declaration is nought for Uncertainty.

The Plaintiff, on laying his *Replevin* in the *Detinet*, has his Goods again, and Damages for the taking; but if it is laid in the *Detinuit*, he shall only recover for the wrongful taking; for that Word being in the Preterperfect Tense, implies, that the Sheriff had his Goods again.

Action of Waste, lies where any Destruction is made in Houses, Lands, Woods, &c. by Tenants for Life, or Years, to the Damage of the Heir, or him in Reversion or Remainder; and the Action is brought for Recovery of the Thing wasted and Damages.

TITLE XIII. Of Exceptions.

Exception is a Stop or Stay to an Action; which Term is used indifferently both in the civil, and common Law; and in each, *Exceptions* are divided into *Dilatory* and *Peremptory*.

A *peremptory Exception*, is that which is absolute, final, and determinate; not to be alter'd, renewed, or restrained.

Exception, in a general Sense, includes all the Kinds of Defence, or Vindication, which a Person against whom a Process is brought, makes Use of to prevent, or retard its Effect.

The *Civilians* reckon three Kinds of *Exception*, viz. *declinatory*, whereby the Authority of the Judge or Court is disallowed; *dilatory*, intended to defer or prevent the Thing coming to an Issue; and *peremptory*, which are proper and pertinent Allegations, founded on some Prescriptions that stand for the Defendant; as want of Age, or other Quality in the Party; or other Matter that may be decided, without entering into a full Discussion of the Merits of the Cause.

TITLE XIV. Of Replications.

Replication, is that which the Plaintiff replies to the Defendant's Answer in Chancery, and which is either *general* or *special*. The *special* is grounded upon Matter arising out of the Defendant's Answer, &c. The *general* is so called from the general Words therein used.

Note, That the *Law of England* consists of three Parts:

1. The *Common Law*, which is the most antient and general *Law* of the Realm.
2. *Statutes*, or Acts of Parliament.
3. *Particular Customs*.

The *Common Law of England*, is derived from the *English*, *Saxons*, and *Danes*, and was antiently divided into three Parts, viz. the *Mercian Law*, the *West-Saxon Law*, and the *Danish Law*.

Those called *Mercian Laws*, are commonly said to have been composed by *Martia*, Queen of the *Britons*, from whom there was a Province called *Provincia Merciorum*. Many Laws were also published by *Ethelred*, King of *Kent*, by King *Ina*, and *Offa*; but *Alfred*, who subdued the whole Kingdom, having revised all the Laws of his Predecessors, retained those which he thought proper, and abolished the rest; whence he is called *Anglicarum Legum Conditor*; and these Laws were called *West Saxon-laws*.

But the Kingdom being afterwards subdued by the *Danes*, they introduced another Law, called *Dane-laws*,

by which their People were govern'd; and they being afterwards destroy'd, *Edward the Confessor*, out of the former Laws, composed that, now called the *Common Law*; for which Reason he is called by *English* Historians, *Anglicarum Legum Restitutor*.

These Laws were only general Customs, observed thro' the Nation, and for that Reason, were called *common*; and perhaps also, *Leges omnibus in commune reddidit*: To be observed by all, with such Amendments as were afterwards to be made.

William the Conqueror did not exact many new Laws, but confirmed the old, viz. *St. Edward's Laws*; and abrogated none that any Ways concern'd Compositions, or Mulcts of Delinquents: But unfortunately brought along with him from *Normandy*, the litigious Spirit of that Nation; which has been since cultivated, and much improved in this Land, to the Oppression of its Inhabitants.

The *Common Law* is also called *Lex non scripta* (not but most of them are wrote in the old *Norman* Dialect) but because it cannot be made by Charter, or Parliament; for those are always Matters of Record, whereas *Customs* are only Matters of Fact, and are no where but in the Memory of the People, and of all Laws, are the best for the *English*; for the written Laws, made by King and Parliament, are imposed upon the Subjects before any Probation or Trial, whether they are beneficial to the Nation, or agreeable to the Nature of the People, except where they are first made temporary, and for their experienced Usefulness afterwards, made perpetual; but Customs bind not till they have been try'd and approved Time out of Mind.

Besides the *Common Law of England*, in general, there are in several Parts of it, certain Customs and common Usages, which have the Force of *Common Law* among those People, to whose Property they belong; as *Borayn English*, a Custom so called, as not being in Use out of *England*; where the youngest Son, or for Want of Sons, the youngest Brother is to inherit; the eldest being supposed to have learned the Father's Trade, and the youngest the least able to shift for himself.

Where the *Common Law* is silent, there are *Statute Laws*, made by the several Kings of *England*, with the Advice and Consent of both Houses of Parliament.

For the Administration of these Laws, there are several Courts of Judicature, viz. the *Chancery*, *Exchequer*, *King's Bench*, and the Court of *Common Pleas*.

CHANCERY.

The *CHANCERY* is the grand Court of Equity and Conscience, instituted to moderate the Rigour of the other Courts, that are tied to the strict Letter of the Law; for as far as I can understand, and know by Experience, Law is not always founded on Justice, Equity, and Conscience; and what's Law, is often very unjust.

The Judge of this Court is the Lord High Chancellor, who is the first Person of the Realm, next after the King and Princes of the Blood, in all civil Affairs. He is the chief Administrator of Justice next the Sovereign.

All other Justices are tied to the strict Law, but the Chancellor has an absolute Power to moderate the Rigour of the written Law, to govern his Judgment by the Law of Nature and Conscience, and to order all Things *Secundum æquum & bonum*. Accordingly, *Staunford* says, the Chancellor has two Powers, the one absolute, the other ordinary; meaning, that though by his ordinary Power he must observe the same Form of Procedure as other Judges, yet in his absolute Power he is not limited by any written Law, but by Conscience and Equity.

The Offices of Lord Chancellor and Lord Keeper, are by the Statute 5 *Eliz.* made the same Thing; till that Time they were different, and frequently subsisted at the same Time in different Persons: Sometimes the Lord Chancellor had a Vice-Chancellor, who was Keeper of the Seal.

The Keeper was created *Per traditionem magni sigilli*, but the Lord Chancellor by Patent; though now that he has the Keeper's Office, he is created in like Manner by giving him the Seal. The Chancellor is likewise Speaker of the House of Lords.

Though the Lord Chancellor be the sole Judge of

the Court of *Chancery*, yet in Matters of much Difficulty he sometimes consults the other Judges; so that this Office may be discharged by one who is not a professed Lawyer, as antiently it commonly was. He has twelve Assistants, or Coadjutors, antiently called *Clerici*, as being in Holy Orders, now Masters in *Chancery*, the first whereof is the Master of the Rolls.

The Master of the Rolls, is a Patent Officer for Life; who has the Custody of the Rolls and Patents, which pass the Great Seal, and of the Records of the Chancery.

In the Absence of the Lord Chancellor or Keeper, he also sits as Judge in the Court of *Chancery*, and is called by Sir *Edward Coke*, his Assistant.

At other Times he hears Causes in the Rolls Chapel, and makes Orders and Decrees. He likewise has the Assistance of the other Masters in *Chancery*; but all Hearings before him are appealable to the Lord Chancellor.

He has also his Writ of Summons to Parliament, and sits next to the Lord Chief Justice of *England*, on the second Woolpack. He has the Keeping of the Parliament's Rolls, and the Rolls House for his Habitation; has also the Custody of all Charters, Patents, Commissions, Deeds, Recognizances, which being made of Rolls of Parchment, gave Rise to the Name. Antiently he was called *Clerk of the Rolls*.

In his Gift are the six Clerks in *Chancery*, the Examiners, three Clerks of the Petty-Bag, and the six Clerks of the Rolls Chapel, where the Rolls are kept.

The Masters of *Chancery*, are usually chosen out of the Barristers of the common Law, and sit in *Chancery*, or at the Rolls, as Assistants to the Lord Chancellor, and Master of the Rolls.

To them is also committed interlocutory Reports, stating of Accompts, taxing Costs, &c. and sometimes by Way of Reference, they are empower'd to make a final Determination of Causes.

They have, Time out of Mind, had the Honour to sit in the House of Lords, tho' they have neither Writs nor Patents to empower them, but as Assistants to the Lord Chancellor, and Master of the Rolls. They had antiently the Care of inspecting all Writs of Summons, which is now perform'd by the Clerk of the Petty-Bag. When any Message is sent from the Lords to the Commons, it is carried by the Masters of *Chancery*. Before them Affidavits are made, and Deeds and Recognizances acknowledged.

Besides these, who may be called *Masters of Chancery ordinary* (being twelve in Number, whereof the Master of the Rolls is reputed the Chief) there are also *Masters of Chancery extraordinary*, appointed to act in the several Counties of *England*, beyond ten Miles Distance from *London*, by taking Affidavits, Recognizances, &c. for the Ease of the Suitors of the Court.

For the Equity Part of the Court of *Chancery* are six Clerks, who have each under him about fifteen more, in the Nature of Attorneys of the Court; two chief Examiners, for examining Witnesses, who have each five or six Clerks a-piece; one principal Register, who has four or five Deputies; Clerk of the Crown, who makes out Writs, Commissions, &c. Warden of the Fleet; Sergeant at Arms, who bears the Mace before the Chancellor, and the Usher and Crier of the Court.

The Six Clerks are Officers of great Account, next in Degree below the 12 Masters, whose Business is to enroll Commissions, Pardons, Patents, Warrants, &c. which pass the great Seal. They were antiently *Clerici*, and forfeited their Places if they married: They are also Attorneys for Parties in Suits depending in the Court of *Chancery*.

Under them were formerly sixty Clerks, who with the Under-Clerks did the Business of the Office; which Number was afterwards increased to ninety. At present the Number is indefinite; an Order having been made, for reducing them to their antient Number of sixty; by not filling up the Vacancies that may happen by Death, &c. till they are fallen to that Standard.

The Examiners are two Officers, whose Business is to examine on Oath, the Witnesses produced on both Sides, upon such Interrogatories, as the Parties to the Suit do exhibit for the Purpose.

The Clerk of the Crown, is an Officer, who by him-

self, or Deputy, is continually to attend the Lord Chancellor or Lord Keeper, for special Matters of State, by Commission, or the like, either immediately from his Majesty, or by Order of his Council, as well ordinary as extraordinary. All general Pardons, upon Grant of them at the King's Coronation, or in Parliament; the Writs of Parliament, with the Names of the Knights, Citizens, and Burgeesses, are also returned into his Office; besides which he has the making of special Pardons, and Writs of Executions upon Bonds of Statute-staple forfeited.

To the Common Law Part, in *Chancery*, belongs the twenty-four Curstors, and their Clerks, who make out original Writs; Clerks of the Petty-Bag; Clerks of the Hanaper; Comptroller of the Hanaper; Clerk of Appeals; Clerk of the Faculties; Sealer; Chafe-Wax; Clerks of the Patents, of Presentations, Dismissions, Licenses to alienate, Enrollments, Protections; Subpœna's, Affidavits, &c.

The Curstors, also called *Clerks of the Course*, are twenty-four in Number; making a Corporation of themselves. To each of them are allotted several Shires; in which Shires they make out such original Writs, as are by the Subject requir'd.

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Comptroller of the Hanaper, is an Officer attending the Lord Chancellor daily in Term and Seal Time. He is to take all Things sealed from the Clerk of the Hanaper, inclosed in Bags of Leather; and to note the just Number and Effect thereof; to enter them in a Book, with all the Duties belonging to the King and other Officers for the same, and so charge the Clerk of the Hanaper with them.

The Proceedings of the Court of *Chancery*, are either *Ordinary*, like the other Courts, according to the Laws, Statutes, and Customs of the Nation, by granting out Writs, remedial or mandatory, Writs of Grace, &c. or *Extraordinary*, according to Equity and Conscience, by Bills, Answers, and Decrees, to examine Frauds, Combinations, Truths, secret Uses, &c. to soften the Severity of the common Law, and rescue Men from Oppression; to relieve them against Cheats, unfortunate Accidents, Breaches of Trust, &c.

Bill in *Chancery*, is a Declaration in Writing, expressing a Wrong or Grievance which the Complainant has suffered by the Party complained of; or else some Offence committed by him against some Law or Statute of the Realm. This Bill is addressed to the Lord Chancellor; and contains the Fact complain'd of, the Damages sustained, and the Petition of Process against the Defendant for Redress.

The Defendant puts an Answer to this Bill, wherein he must endeavour to refute Article by Article, all the Points of Accusations, exhibited against him by the Plaintiff in his Bill.

Decrees in *Chancery*, are the Determinations or Sentences of the Lord Chancellor, upon full hearing and weighing the Merit of the Cause.

Acts of the Court of *Chancery*, are issued Writs or Summons's for Parliaments, and Convocation, Edicts, Proclamations, Charters, Protections, Patents, safe Conducts, Writs of *Moderata Misericordia*.

Here also, are sealed and enrolled Letters Patent, Treaties, and Leagues, Deeds, Writs, Commissions, &c.

A Proclamation, is an Instrument dispatched by the King, with the Advice of his Privy-Council, whereby the People are advertised of something which his Majesty thinks fit for them to know; and whereby they are sometimes required to do certain Things.

Proclamations have the Force of Laws, but then they are supposed to be consistent with the Laws already in being; otherwise they are superseded.

A Charter in *Chancery*, is an Instrument or written Evidence, under the Great Seal of *England*, whereby the King makes a Grant to a Person or Community.

One of the most celebrated Charters in the World,

whom such Sheriff, &c. shall swear to appraise the Goods truly, &c. and may afterwards sell the same to satisfy the Rent and Charges, leaving the Overplus with the Sheriff, &c. (if any) for the Owner's Use.

If Notice be not given in Writing of the Things distrained, and for what you distrain them, they may not be sold by the Statute; but the Distress is to be retained till *Replevin* or Satisfaction. And where a Man, whose Goods are distrained, thinks himself wronged, and would have the Goods or Cattle restored, he may obtain them by *Replevin*; but if he be only desirous of a reasonable Satisfaction for them, he may have an Action of Trespass, or Trover, &c.

A *Replevin* ought to be certain, in setting forth the Number, and Kinds of Cattle distrained, or it will not be good; because if it be uncertain, the Sheriff will not know how to make Deliverance of the Cattle, if a Writ be directed to him to do it. And in a Declaration in *Replevin*, for taking of Cattle, if the Time and Place, when and where taken, be not named, the Declaration is nought for Uncertainty.

The Plaintiff, on laying his *Replevin* in the *Detinet*, has his Goods again, and Damages for the taking; but if it is laid in the *Detinuit*, he shall only recover for the wrongful taking; for that Word being in the Preterperfect Tense, implies, that the Sheriff had his Goods again.

Action of Waste, lies where any Destruction is made in Houses, Lands, Woods, &c. by Tenants for Life, or Years, to the Damage of the Heir, or him in Reversion or Remainder; and the Action is brought for Recovery of the Thing wasted and Damages.

TITLE XIII. Of Exceptions.

Exception is a Stop or Stay to an Action; which Term is used indifferently both in the civil, and common Law; and in each, *Exceptions* are divided into *Dilatory* and *Peremptory*.

A *peremptory Exception*, is that which is absolute, final, and determinate; not to be alter'd, renewed, or restrained.

Exception, in a general Sense, includes all the Kinds of Defence, or Vindication, which a Person against whom a Process is brought, makes Use of to prevent, or retard its Effect.

The *Civilians* reckon three Kinds of *Exception*, viz. *declinatory*, whereby the Authority of the Judge or Court is disallowed; *dilatory*, intended to defer or prevent the Thing coming to an Issue; and *peremptory*, which are proper and pertinent Allegations, founded on some Prescriptions that stand for the Defendant; as want of Age, or other Quality in the Party; or other Matter that may be decided, without entering into a full Discussion of the Merits of the Cause.

TITLE XIV. Of Replications.

Replication, is that which the Plaintiff replies to the Defendant's Answer in Chancery, and which is either *general* or *special*. The *special* is grounded upon Matter arising out of the Defendant's Answer, &c. The *general* is so called from the general Words therein used.

Note, That the *Law of England* consists of three Parts:

1. The *Common Law*, which is the most antient and general *Law* of the Realm.
2. *Statutes*, or Acts of Parliament.
3. *Particular Customs*.

The *Common Law of England*, is derived from the *English*, *Saxons*, and *Danes*, and was antiently divided into three Parts, viz. the *Mercian Law*, the *West-Saxon Law*, and the *Danish Law*.

Those called *Mercian Laws*, are commonly said to have been composed by *Martia*, Queen of the *Britons*, from whom there was a Province called *Provincia Merciorum*. Many Laws were also published by *Ethelred*, King of *Kent*, by King *Ina*, and *Offa*; but *Alfred*, who subdued the whole Kingdom, having revised all the Laws of his Predecessors, retained those which he thought proper, and abolished the rest; whence he is called *Anglicarum Legum Conditor*; and these Laws were called *West-Saxon-Laws*.

But the Kingdom being afterwards subdued by the *Danes*, they introduced another Law, called *Dane-Law*,

by which their People were govern'd; and they being afterwards destroy'd, *Edward the Confessor*, out of the former Laws, composed that, now called the *Common Law*; for which Reason he is called by *English* Historians, *Anglicarum Legum Restitutor*.

These Laws were only general Customs, observed thro' the Nation, and for that Reason, were called *common*; and perhaps also, *Leges omnibus in commune reddidit*: To be observed by all, with such Amendments as were afterwards to be made.

William the Conqueror did not exact many new Laws, but confirmed the old, viz. *St. Edward's Laws*; and abrogated none that any Ways concern'd Compositions, or Mults of Delinquents: But unfortunately brought along with him from *Normandy*, the litigious Spirit of that Nation; which has been since cultivated, and much improved in this Land, to the Oppression of its Inhabitants.

The *Common Law* is also called *Lex non scripta* (not but most of them are wrote in the old *Norman Dialect*) but because it cannot be made by Charter, or Parliament; for those are always Matters of Record, whereas *Customs* are only Matters of Fact, and are no where but in the Memory of the People, and of all Laws, are the best for the *English*; for the written Laws, made by King and Parliament, are imposed upon the Subjects before any Probation or Trial, whether they are beneficial to the Nation, or agreeable to the Nature of the People, except where they are first made temporary, and for their experienced Usefulness afterwards, made perpetual; but Customs bind not till they have been try'd and approved Time out of Mind.

Besides the *Common Law of England*, in general, there are in several Parts of it, certain Customs and common Usages, which have the Force of *Common Law* among those People, to whose Property they belong; as *Barayn English*, a Custom so called, as not being in Use out of *England*; where the youngest Son, or for Want of Sons, the youngest Brother is to inherit; the eldest being supposed to have learned the Father's Trade, and the youngest the least able to shift for himself.

Where the *Common Law* is silent, there are *Statute Laws*, made by the several Kings of *England*, with the Advice and Consent of both Houses of Parliament.

For the Administration of these Laws, there are several Courts of Judicature, viz. the *Chancery*, *Exchequer*, *King's Bench*, and the Court of *Common Pleas*.

CHANCERY.

The *CHANCERY* is the grand Court of Equity and Conscience, instituted to moderate the Rigour of the other Courts, that are tied to the strict Letter of the Law; for as far as I can understand, and know by Experience, Law is not always founded on Justice, Equity, and Conscience; and what's Law, is often very unjust.

The Judge of this Court is the Lord High Chancellor, who is the first Person of the Realm, next after the King and Princes of the Blood, in all civil Affairs. He is the chief Administrator of Justice next the Sovereign.

All other Justices are tied to the strict Law, but the Chancellor has an absolute Power to moderate the Rigour of the written Law, to govern his Judgment by the Law of Nature and Conscience, and to order all Things *Secundum equum & bonum*. Accordingly, *Staunford* says, the Chancellor has two Powers, the one absolute, the other ordinary; meaning, that though by his ordinary Power he must observe the same Form of Procedure as other Judges, yet in his absolute Power he is not limited by any written Law, but by Conscience and Equity.

The Offices of Lord Chancellor and Lord Keeper, at by the Statute 5 *Eliz.* made the same Thing; till that Time they were different, and frequently subsisted at the same Time in different Persons: Sometimes the Lord Chancellor had a Vice-Chancellor, who was Keeper of the Seal.

The Keeper was created *Per traditionem magni sigilli*, but the Lord Chancellor by Patent; though now that he has the Keeper's Office, he is created in like Manner by giving him the Seal. The Chancellor is likewise Speaker of the House of Lords.

Though the Lord Chancellor be the sole Judge of

the Court of *Chancery*, yet in Matters of much Difficulty he sometimes consults the other Judges; so that this Office may be discharged by one who is not a professed Lawyer, as antiently it commonly was. He has twelve Assistants, or Coadjutors, antiently called *Clerici*, as being in Holy Orders, now Masters in *Chancery*, the first whereof is the Master of the Rolls.

The Master of the Rolls, is a Patent Officer for Life; who has the Custody of the Rolls and Patents, which pass the Great Seal, and of the Records of the *Chancery*.

In the Absence of the Lord Chancellor or Keeper, he also sits as Judge in the Court of *Chancery*, and is called by Sir *Edward Coke*, his Assistant.

At other Times he hears Causes in the Rolls Chapel, and makes Orders and Decrees. He likewise has the Assistance of the other Masters in *Chancery*; but all Hearings before him are appealable to the Lord Chancellor.

He has also his Writ of Summons to Parliament, and sits next to the Lord Chief Justice of *England*, on the second Woolpack. He has the Keeping of the Parliament's Rolls, and the Rolls House for his Habitation; has also the Custody of all Charters, Patents, Commissions, Deeds, Recognizances, which being made of Rolls of Parchment, gave Rise to the Name. Antiently he was called *Clerk of the Rolls*.

In his Gift are the six Clerks in *Chancery*, the Examiners, three Clerks of the Petty-Bag, and the six Clerks of the Rolls Chapel, where the Rolls are kept.

The Masters of *Chancery*, are usually chosen out of the Barristers of the common Law, and sit in *Chancery*, or at the Rolls, as Assistants to the Lord Chancellor, and Master of the Rolls.

To them is also committed interlocutory Reports, stating of Accompts, taxing Costs, &c. and sometimes by Way of Reference, they are empower'd to make a final Determination of Causes.

They have, Time out of Mind, had the Honour to sit in the House of Lords, tho' they have neither Writs nor Patents to empower them, but as Assistants to the Lord Chancellor, and Master of the Rolls. They had antiently the Care of inspecting all Writs of Summons, which is now perform'd by the Clerk of the Petty-Bag. When any Message is sent from the Lords to the Commons, it is carried by the Masters of *Chancery*. Before them Affidavits are made, and Deeds and Recognizances acknowledged.

Besides these, who may be called *Masters of Chancery ordinary* (being twelve in Number, whereof the Master of the Rolls is reputed the Chief) there are also *Masters of Chancery extraordinary*, appointed to act in the several Counties of *England*, beyond ten Miles Distance from *London*, by taking Affidavits, Recognizances, &c. for the Ease of the Suitors of the Court.

For the Equity Part of the Court of *Chancery* are six Clerks, who have each under him about fifteen more, in the Nature of Attorneys of the Court; two chief Examiners, for examining Witnesses, who have each five or six Clerks a-piece; one principal Register, who has four or five Deputies; Clerk of the Crown, who makes out Writs, Commissions, &c. Warden of the Fleet; Sergeant at Arms, who bears the Mace before the Chancellor, and the Usher and Crier of the Court.

The six Clerks are Officers of great Account, next in Degree below the 12 Masters, whose Business is to enroll Commissions, Pardons, Patents, Warrants, &c. which pass the great Seal. They were antiently *Clerici*, and forfeited their Places if they married: They are also Attorneys for Parties in Suits depending in the Court of *Chancery*.

Under them were formerly sixty Clerks, who with the Under-Clerks did the Business of the Office; which Number was afterwards increased to ninety. At present the Number is indefinite; an Order having been made, for reducing them to their antient Number of sixty; by not filling up the Vacancies that may happen by Death, &c. till they are fallen to that Standard.

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One of the most celebrated Charters in the World, and

and the greatest in *England*, of which the *English* Nation has always been very jealous, ever since it was first granted to them, is that called *Magna Charta*.

MAGNA CHARTA, is the *Great Charter* of Liberties, granted in the ninth Year of *Henry III.* and confirmed by *Edward I.*

Magna Charta, may be said to derive its Origin from *Edward the Confessor*, who granted divers Liberties and Privileges both Civil and Ecclesiastical by Charter; the same with some others were also granted and confirmed by King *Henry I.* by a celebrated great Charter now lost. And his Successors King *Stephen*, King *Henry II.* and King *John* confirmed, or re-enacted the same; but that last Prince violating his *Charter*, the Barons took up Arms, and his Reign ended in Blood. *Henry III.* who succeeded him, after having procured an Inquisition to be made by twelve Men in each County what the Liberties of *England* were in the Time of King *Henry I.* granted a new *Charter*, being the present *Magna Charta*; which he several Times confirmed, and as often broke again: Till in the 37th Year of his Reign, he came to *Westminster-Hall*, where in the Presence of the Nobility and Bishops, with lighted Candles in their Hands, *Magna Charta* was read, the King all the while laying his Hand on his Breast, and at last solemnly swearing faithfully and inviolably to observe all Things therein contained, as he was a Man, a Christian, a Soldier, and a King. Then the Bishops extinguished their Candles, throwing them on the Ground, crying, *Thus let him be extinguished and sink in Hell who violates this Charter.*

Magna Charta, is the Basis of the *English* Laws and Liberties: It was thought to be so beneficial to the Subject, and a Law of so great Equity in Comparison of those which were formerly in use, that King *Henry* for the granting it had the fifteenth Penny of all the moveable Goods both temporal and spiritual. Sir *Edward Coke* observes, *Magna Charta* has been above thirty Times confirmed.

Note, That the Reason of its being termed *magna* or Great, is either because of the Excellency of the Laws and Liberties therein contained, or because there was another Charter, called *Charta de foresta*, established with it, which was the lesser of the two; or because it contained more than any other *Charters*, or in regard of the Wars and Troubles in the obtaining of it; or of the great and remarkable Solemnity in the denouncing Excommunications against the Infringers of it.

Patents, or *Letters Patent*, are the King's Letters, sealed with the Great Seal; serving to convey the Title or Property of some Grant, Favour, Privilege of a new Establishment, or the like. They have their Name because delivered open, *ut pateant omnibus*, by way of Contradistinction from *Letters de Caebet*, which are sealed.

Court of EXCHEQUER.

The Court of EXCHEQUER, is a Court wherein are tried all Causes relating to the King's Treasury or Revenue; as touching Accounts, Disbursements, Customs, Fines, &c.

It consists of seven Judges, *viz.* the Lord Treasurer, the Chancellor of the *Exchequer*, the Lord Chief Baron, and three other Barons of the *Exchequer*, with one Cursitor Baron.

The Chancellor of the *Exchequer*, is an Officer supposed by some to have been created for qualifying Extremities in the *Exchequer*. He sometimes sits in that Court and the *Exchequer-Chamber*, and with the rest of the Court orders Things to the King's best Benefit. He is always in Commission with the Lord Treasurer, for letting Lands accruing to the Crown by Dissolution of Abbies, and otherwise: He has Power with others to compound for Forfeitures on penal Statutes, Bonds, and Recognizances entered into by the King. He has a great Authority in managing the Royal Revenue, and in Matters of Fowl-Fruits.

The Barons of the *Exchequer* are Judges, to whom the Administration of Justice is committed in Causes between the King and his Subjects, touching Matters belonging to the *Exchequer*, and the King's Revenue.

They are called Barons, because Barons of the Realm were used to be employ'd in that Office.

Their Office is also to look to the Accompts of the King; to which End they have Auditors under them; as well as to decide Causes relating to the Revenue, brought by any Means into the *Exchequer*. So that of late they have been constantly Persons learned in the Law; whereas formerly they were *Majores & discretiores in regno, sive de clero essent sive de curia*. The Lord Chief Baron is the principal Judge of the Court.

The Court of *Exchequer* is divided into two; the one of Law, the other of Equity.

All judicial Proceedings, according to Law, are styled *coram Baronibus* only; but the Court of Equity held in the *Exchequer-Chamber*, is *coram Thesaurario, Cancellario & Baronibus*, before the Treasurer, Chancellor, and Barons.

For a long Time after the Conquest, there set in the *Exchequer* both spiritual and temporal Barons of the Realm, but of later Times there have sat in their Places other Judges, who, though no Peers of the Realm, yet retain the original Denomination.

The common Opinion of *English* Historians is, that this Court was erected by *William the Conqueror*, soon after his having obtained the Kingdom; and that it took its Form from the *Eschequier* or *Scaccarium*, established in *Normandy* long before that Time. In effect, the two *Exchequers* have this in common, that the *Norman* was the supreme Court of that Dutchy, or a general Assize whereat all the great Lords attended, to judge finally of all Concerns of the greatest Importance, and was ambulatory: And that the *English* *Exchequer* was a Court of the highest Jurisdiction, that the Acts thereof were not to be examined by any of the ordinary Courts; that it was the Repository of the Records of all the other Courts, and that it was to be held in the King's Court, and before him; and that it was concerned in the Prerogative as well as the Revenue of the Crown.

The immediate Profits of the Crown, as of *Franchises*, Lands, Tenements, Hereditaments, Debts, Duties, Accounts, Goods, Chattels, all Disbursements, Seizures, and Fines imposed on the Subjects, &c. are within the Jurisdiction of the *Exchequer*. And the King's Attorney may exhibit Bills for any Matter concerning the King in Inheritance or Profits; so also may any Person who finds himself aggrieved in any Cause prosecuted against him, on behalf of the King, or any Patent by Grant of the King, exhibit his Bill against the King's Attorney, to be relieved by Equity in this Court.

To this Court belong two Officers, the King's Remembrancer Office, and that of the Lord Treasurer's Remembrancer; whose Business is to put the Lord Treasurer and Justices of the Court in Remembrance of such Things as are to be called upon, and dealt in for the King's Benefit.

The King's Remembrancer enters into his Office, all Recognizances taken before the Barons, for any of the King's Debts, for Appearance, or for observing Orders, and makes out Processes against the Collectors of Customs, Subsidies, and Fifteenths, for their Accounts.—All Informations upon penal Statutes, are entered in this Office, and there all Matters upon *English* Bills, in the *Exchequer-Chamber* remain.—He makes the Bills of Composition upon penal Laws, takes the Statement of Debts, has delivered into his Office all manner of Indentures, Fines, and other Evidences whatsoever, that concern the assuring of any Lands to the Crown: He every Year, in *crastino animarum*, reads in open Court the Statute for Election of Sheriffs, and gives them their Oath; and reads the Oath of all the Officers of the *Exchequer* when they are admitted.

The Lord Treasurer's Remembrancer, is charged to make Processes against all Sheriffs, Echeators, Receivers, and Bailiffs, for their Accounts: Process of *fieri facias*, &c. Extent for any Debts due to the King, either in the Pipe or with the Auditors, and Process for all such Revenues as are due to the King, by reason of his Tenures. He also makes Record, whereby it appears whether Sheriffs, or other Accomptants, pay their Profilers due at *Easter* and *Michaelmas*. He makes another Record, whether Sheriffs or other Accomptants keep their Days of Prefixion: All Estates or Fines, Issues, and Amerci-

ments, set in any of the Courts of *Westminster*, or at the Assizes or Sessions, are certified into his Office, and are by him delivered to the Clerk of the Estreats, to write Process upon them.

There is a third *Remembrancer*, called of the *First-Fruits*, who takes all Compositions and Bonds for First-fruits and Tenths; and makes Process against such as do not pay the same.

The Lower *Exchequer*, called also the *Receipt of the Exchequer*, is the Place wherein the King's Revenue is received and disbursed. The principal Officers whereof are the Lord Treasurer, a Secretary of the Treasury, a Chancellor of the *Exchequer*, two Chamberlains of the *Exchequer*, an Auditor of the Receipts of the *Exchequer*, four Tellers, a Clerk of the Pells, an Usher of the Receipt, a Tally-cutter, &c.

The Lord Treasurer, called also *High-Treasurer*, is the third great Officer of the Crown; under whose Charge and Government is all the King's Revenue kept in the *Exchequer*. He receives the Office by Delivery of a white Staff to him from the King, and holds it during the King's Pleasure; antiently he received it by Delivery of the Golden Keys of the Treasury. He has the Check of all the Officers, any way employed in collecting Imposts, Customs, Tributes, or other Revenues of the Crown. He has the Gift of all the Customers, Comptrollers, and Searchers of Places in all the Ports of London, and the Nomination of the Escheators in every County.

He alone, or others in Commission with him, letteth Leases of all the Crown Lands, gives Warrants to certain Persons of Quality to have their Wine Custom-free, &c. The antient Salary was 383*l.* but of late is said to have been 8000*l.* The Office of Lord Treasurer is now in Commission.

The two *Chamberlains* keep a Controulment of the Pells, of the Precepts and Exitus, and have certain Keys of the Treasury and Records; they also keep the Keys of that Treasury, where the Leagues of the King's Predecessors and divers antient Books, as *Domesday-Book*, and the *Black Book* of the *Exchequer* remain.

Note, That *Domesday* or *Domes-day-Book*, *Liber judicarius vel sensuatis Angliæ*, the judicial Book, or Book of the Survey of England, is a most antient Record made in the Time of *William the Conqueror*, upon a Survey or Inquisition of several Counties, Hundreds, Tithings, &c. Its Name is formed from the Saxon *Dom*, Doom, Judgment, Sentence, and *Day*, which has the same Force; so that *Domesday* is no more than a Reduplicative, importing Judgment.—The Drift or Design of the Book is to serve as a Register, by which Sentence may be given in the Tenures of Estates; and from which that noted Question, whether Lands by antient Demeasne or not, is still decided; its Contents are summed up in the following Verses:

*Quid deberet fisco, quæ quanta tributa,
Nominè quid census, quæ vestigalia quantum
Quisque tenetur feodali solvere jure,
Qui sunt exempti, vel quos angaria damnat,
Qui sunt vel glebæ servi, vel conditionis,
Quove manumissus patrono jure ligatur.*

This Book is still remaining in the *Exchequer* fair and legible, consisting of two Volumes, a greater and a less; the greater comprehending all the Counties of England, except *Northumberland*, *Cumberland*, *Westmoreland*, *Durham*, and Part of *Lancashire*; which were never surveyed; and except *Essex*, *Suffolk*, and *Norfolk*, which are comprehended in the lesser Volume, which concludes with these Words: *Anno millesimo octogesimo sexto ab incarnatione Domini, vigesimo vero Regis Wilhelmi, facta est descriptio non solum per hos res comitatus, sed etiam alias*. It is called *Liber Judicialis*, by reason a just and accurate Description of the whole Kingdom is contained therein; with the Value of the several Inheritances, &c. It was begun by five Justices assigned for that Purpose in each County, in the Year 1081, and finished in 1086. Camden calls it *Gulielmi librum Censualem*, King *William's* Tax-Book.

Antiently there were many *Dome-Books* in England.

We are told by *Ingulpbus*, that King *Alfred* made a like Register with that of *William the Conqueror*. It was begun upon that Prince's dividing his Kingdom into Counties, Hundreds, Tithings, &c. when an Inquisition being taken of the several Districts, it was digested into a Register, called *Domboc*, q. d. the Judgment-Book, and repositied in the Church of *Winchester*; whence it is also called the *Winchester Book*, and *Rotulus Winton*. And upon the Model of this *Domboc* it is, that the *Doom-Day* of the *Conqueror* was formed.

That of King *Alfred* referred to the Time of King *Ethelred*. And that of the *Conqueror* to the Time of *Edward the Confessor*: The Entries being thus made, *C. Tenet Rex Gulielmus in Dominico, & valet ibi ducata, &c. T. R. E. valebat*, q. d. it was worth so much *Tempore Regis Edwardi*, in the Time of King *Edward*.

There is a third *Domboc*, or *Dooms-Day Book*, in *Quarto*, differing from the other in *Folio*, rather in Form, than Matter. It was made by Order of the same Conqueror; and seems to be the most antient of the two.

A fourth Book there is in the *Exchequer*, called *Dooms-Day Book*; which tho' a very large Volume, is only an Abridgment of the other two. It has Abundance of Pictures, and Gilt-Letters at the Beginning, which refer to the Time of *Edward the Confessor*.

The *Black Book* of the *Exchequer*, is said to have been composed in 1175, by *Gervais of Tilbury*, Nephew of King *Henry II.* and divided into several Chapters. Herein is contained a Description of the Courts of England, as it then stood, its Officers, their Ranks, Privileges, Wages, Perquisites, Power, and Jurisdiction: The Revenues of the Crown, both in Money, Grain, and Cattle.—Here we find that for one Shilling, as much Bread might be bought, as would serve a hundred Men a whole Day; that the Price of a fat Bullock was only twelve Shillings, and a Sheep four.

Auditors of the Exchequer, are Officers who take the Accounts of those who collect the Revenue, Taxes, &c. raised by Parliament; as also of the Sheriffs, Escheators, Collectors, Tenants, and Customers, and set them down and perfect them.

Auditors of Prest, or *Imprest*, are Officers in the *Exchequer*, who take and make up the great Accounts of Ireland, Berwick, the Mint, Customs, Wardrobe, first Fruits, naval and military Expences, and of all Moneys impressed to any Man for the King's Service.

Auditor of the Receipts, is an Officer of the *Exchequer*, who files the Tellers Bills, and makes an Entry of them, and gives the Lord Treasurer a Certificate of the Money received the Week before, who presents the Estimate or Ballance to the King. He makes Debentures to every Teller, before they receive any Money, and takes their Accounts. He keeps the *Black Book* of Receipts, and the Treasurer's Key of the Treasury; and sees every Teller's Money locked up in the new Treasury.

There are four *Tellers of the Exchequer*, whose Business is to receive all Monies due to the Crown, and thereupon to throw down a Bill through a Pipe in the Tally-Court, where it is received by the Auditor's Clerks, who attend there to write the Words of the said Bill upon a Tally, and then deliver it to be enter'd by the Clerk of the Pells, or his Clerk. The Tally is then split or cleft by the two Deputy Chamberlains, who have their Seals, and whilst the Senior Deputy reads the one Part, the Junior examines the other Part with the other two Clerks.

Note, That Authors are divided as to the Origin of this Court of *Exchequer*; *Du Cange* is of Opinion, it came from a checker-wrought Carpet, covering the great Table in that Court; or from the Pavement of the Court, which was checker-wise: Others from the Accomptants in this Office using Chequers or Chess-Boards in their Computations. *Nicod*, from the Court being composed of Persons of different Qualities, as the Pieces or Partitions in a Chess-Board: Others, by Reason People pleaded here, ranged as it were in Battle array, as they do at Chess. *Menage*, after *Pithou*, &c. derives the Word from the German

man *Schicken*, to send; by Reason this Court succeeded those Commissioners, called in antient Titles, *Missi Dominici*. *Skinner*, &c. derive it from *Schatz*, which signifies Treasure; whence *Polydore Virgil* also writes it *Scattarium*, instead of *Scaccarium*. Lastly, *Somner* derives it from *Schakcen*, to ravish; which, according to him, is the Character of the Treasury.

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The Secondary acts as Master of the Office on the Pleas Side, and is the chief Clerk's Deputy; his Business is to examine any Person, who is to be sworn an entering Clerk, or Attorney at large, whether he be duly qualified, and to present him to the Chief Justice. He also signs all Judgments, and gives Costs upon them; and the Court upon any Motion, in Relation to the irregular Practice of any Clerk or Attorney, generally refers the Examination thereof to him. He also takes all Affidavits in Court (unless on the Crown-side) and the Acknowledgment of all Deeds in Court.

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The Office of the *Cylos Brevium*, is to file all original and other Writs, whereon you proceed to Outlawry: He examines and seals all Records of *nisi prius*, for Trials at the Assizes in several Counties, and hath several Clerks under him for making up Records throughout *England*; but many Times the Plaintiff's Attorney, &c. dispatches this Business, paying a Fee of 6 *s. 6 d.*

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An *Attorney* is a Person appointed by another to do something in his Stead, particularly to solicit and carry on a Law-Suit.

Attorneys in common Law, are much the same with Procurators, Proctors, or Syndicks in the civil Law.

Attorneys are properly those who sue out Writs or Processess, or commence, carry on, and defend Actions or other Proceedings, in the Name of other Persons, in any of the Courts of common Law. They are distinguished from Solicitors, who do the like Business in the Courts of Equity; as the Chancery, Equity-Court in the

Exchequer, Chamber-Court of the Dutchy, &c.

None are to be admitted to act, either as the one or the other, without having served a Clerkship of five Years, taking the Oath provided in that Case, and being enrolled. Judges of the said Courts of Law to examine into the Capacity of the Attorneys, and those of the Court of Equity the Capacity of the Solicitors.

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Attorney is either General or Special.

Attorney General is he who is appointed to manage the Affairs or Suit of a Community; or rather, who is appointed to conduct all the Suits in general, whether of a Community, or a particular Person.

Such is the Attorney General of the King, who is the same as *Procurator Caesaris* in the Roman Empire. To him come Warrants for making out Patents, Pardons, &c. He is at the Head of managing all Law-Affairs of the Crown, either in criminal Prosecutions, or otherwise; especially in Matters of Treason, Sedition, &c. In all Courts he pleads within the Bar; but when a Privy-Counsellor, he cannot plead in any Court, but on the King's Affairs, without obtaining a Privy Seal for so doing.

Attorney Special, is he who is employ'd in one or more Causes particularly specified.

If any Person who has been convicted of Forgery, or wilful and corrupt Perjury, or common Barretry, shall practise as an Attorney, Solicitor, or Agent, in any Suit or Action brought in any Court of Law, upon Complaint before the Judge, where such Suit shall be depending, if it appears to the said Judge on Examination in open Court, that such Person has offended contrary to this Act, the Judge may cause the Offender to be transported to the Plantations for seven Years, by Ways, and under such Penalties as Felons. Stat. 12. Geo. I. c. 29.

No Attorney, or Solicitor, shall maintain any Action for Fees, at Law or in Equity, till one Month or more after he shall have delivered to the Party charged therewith, or left for him at his Dwelling House, &c. a Bill of such Fees, in a common legible Hand, and in the English Language (except Law Terms and Names of Writs) and in Words at length, the Times and Sums excepted, subscribed with the proper Hands of such Attorney or Solicitor; and on Application of the Party chargeable by such Bill to the Lord Chancellor, or to a Judge of any of the Courts, in which the Business, or the greatest Part, shall have been transacted, and Submission to pay the Sum, that on Taxation shall appear to be due, the Judges, &c. are to refer the Bill to the proper Officer to be taxed, without any Money being brought into Court for it, and though no Action be commenced, &c. And if the Attorney having due Notice, shall not attend the Taxation, the Officer may proceed to tax the Bill *ex parte* (pending which Reference no Action shall be brought) and on Settlement of the Bill, the Party shall forthwith pay the whole Sum found justly due thereon, which shall be a full Discharge; and in Default, shall be liable to an Attachment, or such other Process, as he was liable unto, &c.

And if it shall appear that the Attorney has been paid more than his Bill, he shall forthwith refund the Overplus, or be likewise liable to an Attachment: And the respective Courts are to award the Costs of Taxation,

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to be paid according to the Event thereof, viz. if the Bill taxed be less by a sixth Part than the Bill delivered, the Attorney is to pay the Costs of the Taxation; but if it shall not be less, the Court, &c. shall charge the Attorney or Client, in regard to the Reasonableness or Unreasonableness of such Bills.

Note, That Attorneys are sometimes guilty of *Barratry* and *Champany*. A Barrator in Law is a common Mover, or Maintainer of Suits, Quarrels, or Parties, either in Court or elsewhere. — Barrators are punished by Fine and Imprisonment, bound to their good Behaviour, &c. and being of the Profession of the Law, shall be disabled to practise, 34 Edw. III. — An Attorney is in Danger of being convicted of Barratry, for maintaining another in a groundless Action, to the commencing whereof he was no way privy, &c. and a common Solicitor who solicites Suits, is a common Barrator, and may be indicted. By Statute no Person shall take upon him any Business in Suit, to have Part of the Land or Thing sued for, which is called *Champany*; nor shall any one upon any Covenant give up his Right to another in such Case, on pain that the Taken shall forfeit to the King so much of his Lands and Goods as amounts to the Value of the Part of the purchased, &c. for such Maintenance, Stat. 28. Edw. I. c. 11. — And Attorneys convicted of *Champany*, shall suffer three Years Imprisonment, and be fined at the King's Pleasure, by 33 Edw. I. If any Attorney undertakes or follows a Cause to be paid in gross, when the Thing in Suit is recovered, if he prevail therein, this has been held *Champany*. — Persons as move Pleas and Suits as their own are Champartners.

Counsellor at Law, in French called *Avocat*, is a Person learned in the Law, retained by the Client to plead his Cause in a Court of Judicature. This is a very noble Profession seldom followed, but by Persons of Birth and Merit. In France, all the chief Magistrates, as the Lord Chancellor, *Presidents a mortier*, &c. must have been received *Avocats* in some of the Parliaments of the Kingdom, and even pleaded at the Bar, before they can be promoted to any of those eminent Posts.

Counsellors at Law, may alledge any Thing which is informed them by their Clients, if pertinent to the Matter; and need not examine whether it be true or false; for it is at the Peril of him who informs them: But after the Court hath delivered their Opinion of the Matter depending before them, the Council at the Bar ought not to urge any Thing further in that Cause. In France a Judge seldom suffers a Counsellor to plead uncovered; but orders him, soon after he has begun to plead, to put on his Cap.

The Fee of a Counsellor is *honorarium quiddam*, not *mercenarium*, as that of an Attorney or Solicitor; and it hath been therefore questioned, whether an Action of Debt does lie for his Fee, unless it be upon a special Retainer; though in my Opinion, and according to Reason and Justice, he should be paid, according to the Ability of the Client who employs him; since on his Learning and Eloquence, depends almost the whole Success of the Cause.

No Counsellor shall set his Hand to a frivolous Plea, &c. And as Counsellors have a special Privilege to practise the Law, they are punishable for Misbehaviour by Attachment.

The first Process in the Court of King's-Bench, and in almost all the other Courts of Judicature, is the Arrest, which is a Restraint of a Man's Person, obliging him to be obedient to the Law, by Command of some Court or Office of Justice; therefore none shall be arrested for Debt, Trespas, &c. in any civil Action, but by virtue of a Precept or Commandment, out of the Courts of Westminster, or other Courts.

By *Magna Charta* no Person shall be arrested or restrained of his Liberty, but either by Order of a Court of Record, by lawful Warrant, or the King's Writ. — And Writs express Arrest, by the Word *Capias*, to take hold of a Man; for an Officer must actually lay hold of a Person, besides saying, He arrests him, or it will be no lawful Arrest.

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Antiently those of Authority in Court, had it in their Power, whether or no to suffer Men to appear, or sue by another than themselves; as appears from *Fitz. de nat. brev.* in the Writ *Dedimus potestatem de Attornato faciendo*; where it appears that Men who were driven to procure the King's Writs, or Letters Patent, were obliged to appoint Attorneys for them. But it is since provided by Parliament, that it shall be lawful to appoint an Attorney, without such Circuition; as appears by several Statutes, 20 H. III. c. 10. — 6 Ed. I. c. 8. &c.

There is a great Diversity of Writs in the Table of the Register, wherein the King commands the Judges to admit of Attorneys; whereby there arose so many unskilful Attorneys, and so many Mischiefs thereby, that for restraining them it was enacted, 4 Hen. IV. c. 18. that the Judges should examine them, and displace the Ignorant; and again 33 Hen. VI. c. 7. that there should be a certain Number of Attorneys in Norfolk and Suffolk.

Attorney is either General or Special.

Attorney General is he who is appointed to manage the Affairs or Suit of a Community; or rather, who is appointed to conduct all the Suits in general, whether of a Community, or a particular Person.

Such is the Attorney General of the King, who is the same as *Procurator Caesaris* in the Roman Empire. To him come Warrants for making out Patents, Pardons, &c. He is at the Head of managing all Law-Affairs of the Crown, either in criminal Prosecutions, or otherwise; especially in Matters of Treason, Sedition, &c. In all Courts he pleads within the Bar; but when a Privy-Counsellor, he cannot plead in any Court, but on the King's Affairs, without obtaining a Privy Seal for so doing.

Attorney Special, is he who is employ'd in one or more Causes particularly specified.

If any Person who has been convicted of Forgery, or wilful and corrupt Perjury, or common Barretrie, shall practise as an Attorney, Solicitor, or Agent, in any Suit or Action brought in any Court of Law, upon Complaint before the Judge, where such Suit shall be depending, if it appears to the said Judge on Examination in open Court, that such Person has offended contrary to this Act, the Judge may cause the Offender to be transported to the Plantations for seven Years, by Ways, and under such Penalties as Felons. Stat. 12. Geo. I. c. 29.

No Attorney, or Solicitor, shall maintain any Action for Fees, at Law or in Equity, till one Month or more after he shall have delivered to the Party charged therewith, or left for him at his Dwelling House, &c. a Bill of such Fees, in a common legible Hand, and in the English Language (except Law Terms and Names of Writs) and in Words at length, the Times and Sums excepted, subscribed with the proper Hands of such Attorney or Solicitor; and on Application of the Party chargeable by such Bill to the Lord Chancellor, or to a Judge of any of the Courts, in which the Business, or the greatest Part, shall have been transacted, and Submission to pay the Sum, that on Taxation shall appear to be due, the Judges, &c. are to refer the Bill to the proper Officer to be taxed, without any Money being brought into Court for it, and though no Action be commenced, &c. And if the Attorney having due Notice, shall not attend the Taxation, the Officer may proceed to tax the Bill *ex parte* (pending which Reference no Action shall be brought) and on Settlement of the Bill, the Party shall forthwith pay the whole Sum found justly due thereon, which shall be a full Discharge; and in Default, shall be liable to an Attachment, or such other Process, as he was liable unto, &c.

And if it shall appear that the Attorney has been paid more than his Bill, he shall forthwith refund the Overplus, or be likewise liable to an Attachment: And the respective Courts are to award the Costs of Taxation,

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to be paid according to the Event thereof, viz. if the Bill taxed be less by a sixth Part than the Bill delivered, the Attorney is to pay the Costs of the Taxation; but if it shall not be less, the Court, &c. shall charge the Attorney or Client, in regard to the Reasonableness or Unreasonableness of such Bills.

Note, That Attorneys are sometimes guilty of *Barratry* and *Champarty*. A *Barrator* in Law is a common Mover, or Maintainer of Suits, Quarrels, or Parties, either in Court or elsewhere. — *Barrators* are punished by Fine and Imprisonment, bound to their good Behaviour, &c. and being of the Profession of the Law, shall be disabled to practise, 34 Edw. III. — An Attorney is in Danger of being convicted of *Barratry*, for maintaining another in a groundless Action, to the commencing whereof he was no way privy, &c. and a common Solicitor who solicites Suits, is a common *Barrator*, and may be indicted. By Statute no Person shall take upon him any Business in Suit, to have Part of the Land or Thing sued for, which is called *Champarty*; nor shall any one upon any Covenant give up his Right to another in such Case, on pain that the Taken shall forfeit to the King so much of his Lands and Goods as amounts to the Value of the Part of the purchased, &c. for such Maintenance, Stat. 28. Edw. I. c. 11. — And Attorneys convicted of *Champarty*, shall suffer three Years Imprisonment, and be fined at the King's Pleasure, by 33 Edw. I. If any Attorney undertakes or follows a Cause to be paid in gross, when the Thing in Suit is recovered, if he prevail therein, this has been held *Champarty*. — Persons as move Pleas and Suits as their own are *Champarters*.

Counsellor at Law, in French called *Avocat*, is a Person learned in the Law, retained by the Client to plead his Cause in a Court of Judicature. This is a very noble Profession seldom followed, but by Persons of Birth and Merit. In France, all the chief Magistrates, as the Lord Chancellor, *Presidents a mortier*, &c. must have been received *Avocats* in some of the Parliaments of the Kingdom, and even pleaded at the Bar, before they can be promoted to any of those eminent Posts.

Counsellors at Law, may alledge any Thing which is informed them by their Clients, if pertinent to the Matter; and need not examine whether it be true or false; for it is at the Peril of him who informs them: But after the Court hath delivered their Opinion of the Matter depending before them, the Council at the Bar ought not to urge any Thing further in that Cause. In France a Judge seldom suffers a Counsellor to plead uncovered; but orders him, soon after he has begun to plead, to put on his Cap.

The Fee of a Counsellor is *honorarium quiddam*, not *mercenarium*, as that of an Attorney or Solicitor; and it hath been therefore questioned, whether an Action of Debt does lie for his Fee, unless it be upon a special Retainer; though in my Opinion, and according to Reason and Justice, he should be paid, according to the Ability of the Client who employs him; since on his Learning and Eloquence, depends almost the whole Success of the Cause.

No Counsellor shall set his Hand to a frivolous Plea, &c. And as Counsellors have a special Privilege to practise the Law, they are punishable for Misbehaviour by Attachment.

The first Process in the Court of *King's-Bench*, and in almost all the other Courts of Judicature, is the Arrest, which is a Restraint of a Man's Person, obliging him to be obedient to the Law, by Command of some Court or Office of Justice; therefore none shall be arrested for Debt, Trespass, &c. in any civil Action, but by virtue of a Precept or Commandment, out of the Courts of *Westminster*, or other Courts.

By *Magna Charta* no Person shall be arrested or restrained of his Liberty, but either by Order of a Court of Record, by lawful Warrant, or the King's Writ. — And Writs express Arrest, by the Word *Capias*, to take hold of a Man; for an Officer must actually lay hold of a Person, besides saying, He arrests him, or it will be no lawful Arrest.

If a Bailiff arrests a wrong Person, as one Man for another,

another, where there are several of the Name, &c. it will be false Imprisonment; for which Damages shall be recovered: And so it is if he arrests a Man without Warrant, or after the Return of the Writ be past.

If Bailiffs demand more than their just Fees, when offered them, and detain a Person thereupon, it is false Imprisonment: Also when they take Fees not warranted by Law, it is Extortion; which by the common Law is punished by Fine, and Imprisonment, on Indictment and by Statute they shall render treble Value and Damages.—And by this last Statute, the Bailiff's Fee for an Arrest is no more than 4*d.* the Sheriff's 20*d.* and the Gaoler is to take for a Commitment but 4*d.* And Bailiffs can't legally take any Thing but what is allow'd by the Statute, 23 *Hen. VI.* and subsequent Acts.

Attorneys, &c. maliciously causing any Person to be arrested, where there is no Cause of Suit, the Prosecutors shall suffer six Months Imprisonment, and before discharged pay treble Damages: 8 *Eliz. c. 2.*—No Attorney shall procure blank Warrants from Sheriffs for Arrest; and a Defendant lawfully delivered from an Arrest, shall not be arrested again at the same Time, at the Suit of the same Plaintiff: Attorneys offending therein shall be expunged out of the Roll, and otherwise punished. *Ord. cur. Mich. 15 Car. II.*

No Bailiff, or other Officer, shall carry any Person under Arrest to any Tavern, Ale-house, &c. or private House, without his Consent, so as to charge him with any Wine, Beer, Ale, or other Liquor, but what he shall freely call for.

By the Statute 12 *Geo. I. c. 29. for Prevention of vexatious Arrests*, if the Debt or Cause of Action be under 10*l.* on any Writ or Process issuing out of a superior Court, or do not amount to 40*s.* on Process out of an inferior Court, the Defendant shall not be arrested, but be served personally with a Copy of the Process; and if he does not appear at the Return thereof, or within four Days after, the Plaintiff, on Affidavit made of such Service, which is to be filed in the proper Court *gratis*, may enter a common Appearance for the Defendant, or file common Bail, and proceed as if the Defendant had entered it.—And where the Bailiff's Cause of Action is 10*l.* or upwards, or 40*s.* in an inferior Court, Affidavit is to be made and filed of such Cause of Action, before some Judge or Commissioner of the Court, out of which the Writ issues, or before the Officer issuing it, for which 1*s.* only besides Stamps shall be paid; and the Sum mentioned in the Affidavit shall be indorsed on the Back of the Process, for which the Sheriff or Officer shall take Bail, and no more: And if such Affidavit and Indorsement be made, the Plaintiff shall not arrest the Defendant's Body, but is to proceed as above.

Warrants to make Arrests, shall not be delivered out by Sheriffs, &c. till they actually have the Writ, under the Penalty of 10*l.* *Stat. 6 Geo. I. c. 21.*—And Sheriffs and Under-Sheriffs being served with a Rule peremptorily to return any Writ issuing out of this Court, or to bring in the Body of the Defendant within six Days; if the same be not done in the said Time, the Court of *King's Bench* will issue an Attachment against them, with out a further Rule.

The first Thing a Defendant is obliged to do, when he is arrested on any Process, out of the Courts at *Westminster*, is to enter an Appearance, *i. e.* to engage himself to answer the Action entered against him; which is done, if in the *King's Bench*, by filing either of common or special Bail, if the Action be by *Bill*.—If it be by *Original*, the Appearance must be with the Filazer of the County where the Arrest was.

Note, That *Bail*, in Law, is the setting at Liberty one arrested, or imprisoned upon an Action, either Civil or Criminal, under Sureties taken for his Appearance at a Day and Place assigned.—It is called *Bail*, because hereby the Party confined is *Baillé*, delivered into the Hands of those who bind themselves for his forthcoming.—*Manwood* distinguishes between *Bail*, and *Mainprise*, thus: That he who is *mainprised*, is said to be at large, and to go about at his Liberty, without Ward, till the Time of Appearance; whereas he who is let to *Bail* to two or more Men, is always ac-

counted by Law, to be in their Ward and Custody for the Time; and they may, if they please, actually keep him in Prison.

Common Bail, is that given in Actions of small Prejudice, or slight Proof; in which Cases any nominal Sureties are taken, as *John Doe* and *Richard Roe*: This being no other than a Form of Appearance.

Special Bail, is given in Cases of greater Moment, where it is required that the Sureties be Subsidy-Men at the least, and according to the Value of the Matter in Question.—It was enacted some Years ago, in Compassion to the Poor (as pretended) that no Persons should be held to special *Bail*, in any Action brought for less than 10*l.*—This is observed as to Writs issued out of the Courts of *Westminster-Hall*: But the *Marshalsea* Court continues to arrest, and hold to bail for Actions exceeding 40*s.*—What better are the Poor of this Metropolis for this Provision, which has indeed taken them out of bad Hands, but left them to be grasped to Death by worse!—If there be any Exception in the Act in Favour of that Court, it was doubtless more owing to the Degree of Favour in which the superior Officers of such Court stood with certain great Persons in Parliament, than to any real Reason there could be for it. *Seasonable Observat. on the Declens. of Trade*, p. 76.

Appearance, in the *Common Pleas*, must be entered with the Filazer there; but if it be by Bill, with the Prothonotary.

In Actions of Battery, Trespass, Slander, &c. though the Plaintiff is like to recover large Damages, *special Bail* is not to be had, unless in special Cases by Order of the Court: Nor is it required in Actions of Covenant, except it be to pay Money, because the Damages are uncertain till Declaration, &c. or in Action of Account, till Judgment *quod computet*; nor on Bonds with collateral Conditions; or against Heirs, Executors, or Administrators, if they have not wasted the Testator's Goods.

Where a Cause is removed by *Habeas Corpus*, if the *Bail below* offer themselves to be *Bail above*, they shall be taken, not being excepted against below; unless the Cause comes out of *London*.

When a Cause is removed out of an inferior Court, the Plaintiff or his Attorney are to enter a *Caveat* with the Justices for good Bail; and the Attorney for the Defendant must give Notice to the Plaintiff of the Time when the Bail shall be put in, and of the Names of the said Bail, and where they live, &c. that the Plaintiff's Attorney may except against the Bail if he thinks fit.

Special Bail, taken before a Judge, or by Commissioners in the Country, when accepted, is to be filed: And *Bail* is not properly such until it is filed, when it is of Record; but it shall be accounted good 'till questioned, and disallowed.—Common *Bail-pieces* are filed in the Office with the Clerk of the common Bails.

There are divers Sorts of *Bail-pieces*: 1. A common *Bail-piece*, where the Defendant is served with a Copy of the Process; this is used merely to bring the Defendant into Court. 2. A special *Bail-piece*, on a *Capi Corpus*, or Arrest returned, when the Defendant is actually arrested, and the Sheriff has taken a Bail-Bond. 3. A *Bail-piece* on a *Habeas Corpus*, when the Defendant lives at a Distance, and the Cause is removed out of an inferior Court: This Bail is put in on the Return of the Writ, and not before. 4. *Bail-pieces* taken before Commissioners.

These *Bail-pieces* are written on a small square Piece of Parchment, but cut sloping at the Bottom, in a Secretary-Hand: And if it be common Bail, it must have a double Six-penny Stamp; and if special, it is to be stamp'd with double Twelve-penny Stamps.

A Person in Execution is notailable, unless there be an *Audita Querela* brought.

Note, That *Audita Querela*, is a Writ which lies against him, who having taken a Statute Merchant, or a Recognizance in the Nature of a Statute-Staple, or a Judgment, or a Recognizance of another; and craving, or having obtained Execution of the same from the Mayor and Bailiffs, before whom it was entered; at the Complaint of the Party who entered the same, upon

upon Suggestion of some just Cause; why Execution should not be granted; as a Release, or other Exception.—This Writ is granted by the Lord Chancellor, upon View of the Exception suggested, to the Judges of either Bench, willing them to grant Summons to the Sheriff of the County where the Creditor is, for his Appearance at a certain Day before them.

Next to the Defendant putting in Bail to the Action, follows the *Declaration* of the Plaintiff; which is the Act of shewing in Writing the Grief and Complaint of the Demandant or Plaintiff against the Defendant, where he is supposed to have received some Wrong, which is to be afterwards made out and proved.

The Plaintiff's *Declaration* ought to be plain and certain, as it compels the Defendant to make Answer to it, otherwise the Jury would be at a Loss in giving their Verdict, and the Judges uncertain to their Judgment, &c. for they all depend on the Certainty and Sufficiency of the *Declaration*. It must set forth the Plaintiffs and Defendants Names; the Cause or Matter of the Complaint, in what Manner the Action did arise, the Time and Place the Injury was done, and the Damage thereby sustained.

The *Declaration* is an Exposition of the Writ, with the Addition of Time, Circumstances, &c. and must be true and clear, for the Court is not to take Things in it by Implication; but it is not necessary to set forth Matters of Fact therein, as in a Bill in Chancery, &c. because they are to be tried by Jury.

In an Action of Debt upon a Bond, the Plaintiff must alledge a Place where the Bond was made, or his *Declaration* will be ill; for the Jury should come from the Place. If Action of the Case be brought on an Assumpsit, the Plaintiff is to declare upon the whole Promise made, and not on Part of it, or upon the Trial he will be nonsuited.—In *Covenant* there needs no more of the Deed to be mentioned in the *Declaration*, than only so far as in the *Covenant* where the Breach is to be assigned. And in *Slander*, no more Inducement is required than is necessary. But for *Words*, the *Declaration* must lay them expressly and positively, not to the Effect following, &c. and it is safest that they be laid *falso & malitiose*, &c. though when *malitiose* has been omitted it has been held good, if the Words themselves were malicious and slanderous.—In Actions upon general Statutes that the Defendant has committed such an Act, against the Form of the Statute in such Case made and provided, is enough without reciting the whole Act; but particular Statutes must be treated at large; and an attested Copy produced at the Trial.

It is good to lay sufficient Damages in all *Declarations*. In *Debt* it has been usual to double the Debt or Damages. In *Case*, to lay double the Amount of the Injury received. For *Slander*, to double if not more, the Damage arising from the Words, as they affect a Man's Life or Reputation, &c. For *Battery*, very large Damages are commonly laid, though not always recovered. And for *Trespass*, in Proportion to the *Trespass* committed. In *Waste*, &c. where treble Damages are incurred by Statutes, the Damages are to be laid singly, which the Court are to treble.

In general you must lay the Damages according to the Value of the Thing demanded in the Action, and the Heinousness of the Offence. Damages shall not be given for that which is not contained in the Declaration; and only for what is materially alledged: But greater Costs may be given than the Damages laid, unless the Jury find under 40 s. in Actions of *Trespass on the Case*, &c. In an Action upon the Case, the Jury may find less Damages than the Plaintiff lays in his Declaration, though they cannot bring in more; if they do, it will be Error; yet the Costs may be increased beyond the Sum mentioned in the *Declaration* for Damages; and the Plaintiff may release Part of the Damages.

If there are two Counts in the *Declaration* for Things of the same Kind, and they are not averred to be different, it is not good. Where a Declaration is bad, and the Defendant demurs thereto, the Plaintiff may set it right in a second Action; but if the Defendant pleads in Bar, and do not take Advantage of it, and the Plaintiff proceeds to Issue, if the Right is found for the De-

fendant, the Plaintiff is *stopped* by the Verdict from bringing a new Action; and so it is if he had demurred to the Plea in Bar.

Note, That *Estoppel*, from the French *Estouper oppilare*; to stop, is an Impediment or Bar of Action, growing from a Man's own Act or Deed, against which a Man is forbidden by Law to speak, though it be to say the Truth. *Goddard* defines an *Estoppel* to be any Bar or Hindrance to one to plead the Truth; and extends it not only to the Impediment given by his own Act, but by another's also. There are three Kinds of *Estoppels*, viz. by *Matter of Record*, by *Matter in Writing*, and by *Matter in pais*.

If a *Declaration* be defective in Matter of Form only, and the Defendant takes no Exception against it, but pleads to Issue thereon, and there a Verdict is had for the Plaintiff, the Defendant cannot afterwards take Advantage of this Defect, which is help'd by the Verdict.—Though if the *Declaration* is insufficient in Matter of Substance, the Verdict will not help it.

A defective *Declaration*, is sometimes aided by the Statutes of *Jeofails*, &c. but Uncertainty in a *Declaration* in Matter of Substance, is not helped by Statutes, after Verdict; as in Case of *Trespass* for taking Fish, where their Number or Nature are not set forth.—By Statute it is ordained, that a Count or *Declaration* shall be good, if it hath Matter of Substance, though the Terms are not properly apt and proper.

Note, That *Jeofaile*, or *Jeofayle*, a Compound of two French Words, *J'ai failli*, I have failed; is used in a legal Sense. When the Parties to any Suit have, in Pleading, proceeded so far that they have joined Issue, which shall be tried, or is tried by a Jury; and this Pleading, or Issue, is badly joined, so that it will be Error if they proceed.—In this Case, one of the Parties might, by their Council, shew it to the Court, as well after Verdict given, as before the Jury was charged: But this occasioning great Delays in Suits; for the Redress thereof several Statutes were made, viz. 32 Hen. III. c. 30. by which it was enacted, 'That if the Jury have once passed upon the Issue; though afterwards there be found a *Jeofaile* in the Pleading, yet shall Judgment be given according to the Verdict of the Jury.' Other Statutes have also been made relating to the same Thing, in the Time of Queen *Elizabeth* and King *James I.* and yet the Fault not mended.

The Plaintiff's Attorney may amend his *Declaration* in Matter of Form, after a general Issue pleaded, before Entry thereof; without paying Costs, or giving any *Imparlance*; but if he amends in Substance, he must pay Costs or give *Imparlance*; and after a special Plea pleaded, though he would give an *Imparlance*, he is to pay Costs.

Note, That *Emparlance*, or *Imparlance*, is a Desire, or Petition in Court, of a Day to consider, or advise what Answer the Defendant shall make to the Action of the Plaintiff.—The Civilians call it *Petitio induciarum*.—*Kitchin* mentions *Imparlance general*, and *special*: The first seems to be only that made in one Word, or in general Terms: *Imparlance special*, is where the Party requires a Day to deliberate.—*Briton*, also, uses *Imparlance* for the Conference of a Jury upon a Cause committed to them.

Declarations grounded on original Writs, if they are faulty cannot be mended. But a *Declaration* grounded upon a Bill (as most *Declarations* in this Court are) is amendable, if the Bill be not actually filed; which is rarely done: Though where any *Declaration* is delivered to the Defendant's Attorney, if the Plaintiff does afterwards amend his *Declaration*, and tender another Copy with the Amendments, the Defendant is not obliged to receive it, except the Master of the Office, a Judge, or the Court orders him to do it.

A Plaintiff has two Terms to exhibit his *Declaration* against the Defendant, that Term being reckoned one wherein the Writ was returnable; and if no *Declaration* comes in before the Rising of the Court, the last Day of the second Term, on a Rule of Court given,

the Plaintiff shall be nonsuited, and the Defendant sign a *Non Pros.* whereupon he shall have Costs.

The Defendant answers to the Plaintiff's Declaration, by a *Plea*.

All *Pleadings* are either *General* or *Special*.

A *General Plea*, is commonly made on a little Piece of two-penny stamp'd Paper, without Council's Hand, having only the Defendant's Attorney's Name to it.—As in *Debt* on Contract, *he owes nothing*.—In *Debt* by Bond, *'tis not his Deed, or he paid it at the Day*. In *Action of the Case*, upon a Promise, *he has not promised*.—In *Trespass*, *Not guilty*.—And in *Covenant*, *Performance of Covenants*, &c.

A *Special Plea* is drawn up in Form, setting forth the Matter pleaded at large, with an apt Conclusion to the Declaration or Action; and must be signed by Council, or it will not be received. The Defendant's Attorney is to pay the Plaintiff's Attorney, for entering the Plea; and a foreign Plea is to be engrossed on Parchment, and sign'd by Council, and be put upon the Oath of the Defendant that it is true.

Special Pleas, in Answer to the Plaintiff's Declaration, are divided into two Kinds; *Pleas in Abatement*, and *in Bar*; and every *Plea* must be pleaded either *in Bar* to the Action brought, or *in Abatement* of the Writ upon which the Action is framed; or it is but a Discourse, and not a *Plea*.

A *Plea in Abatement*, is temporary, and very often merely dilatory; for it does not destroy the Action, but stops the Cause for a while, till the Defect is removed; as when there is some Fault in the Writ or Declaration, for Misdemeanor of the Defendant, where the Plaintiff is excommunicate, &c.

A *Plea in Bar*, is an Objection to the Plaintiff's Action, shewing Cause why he ought not to have the same: It is either peremptory and perpetual; or it is temporary, and bears only for a Time. If the Defendant pleads a general Release, &c. *in Bar*, it will destroy the Plaintiff's Action for ever.

In good Order of *Pleading*, a Person must plead, 1. To the Jurisdiction of the Court. 2. To the Person, first of the Plaintiff, then of the Defendant. 3. To the Writ. 4. To the Action of the Writ. 5. To the Account or Declaration. 6. To the Action itself, in Bar thereof.—A *Plea* to the Jurisdiction, is called a *foreign Plea*, because it alledges, that the Matter ought to be tried in another Court, &c.—*Pleas* to the Person have been formerly six, *Villinage*, *Outlawry*, *Excommunication*, *the Party an Alien*, *out of Protection*, and *professed in Religion*, but the last is now no *Plea*. The *Plea to the Writ*, &c. is for Variance between the Writ and Record, Death of Parties, Misnomer, Jointenancy, &c. and may be to the Writ and Bill, or Count together.—*Pleas* to the Count or Declaration, are Variance between the Writ and the Count, Speciality of Record, Uncertainty, &c. and all those are properly *Pleas in Abatement*. *Plea* to the Action of the Writ, is where one pleadeth such Matter which shews that the Plaintiff had no Cause to have the Writ brought.—And the *Plea in Bar* to the Action itself, is when the Defendant pleadeth a *Plea*, which is sufficient to overthrow the Action of the Plaintiff.

All *Pleas* are to be succinct, without unnecessary Repetitions, and be direct and pertinent to the Case, not by Way of Argument or Rehearsal: And the *Plea* of every Man shall be taken most strongly against himself. A *Plea* must directly answer the Charge in the Declaration; and if it doth not answer all the Matter therein, the Plaintiff shall have Judgment as for Want of a *Plea*. Every *Plea* ought to be single and certain, and not be double, or contain a Multitude of distinct Matter to one and the same Thing, whereto several Answers are required, which will not be allowed; nor where the Defendant pleads two Matters, each being a sufficient Bar to the Action, unless one depends upon the other, &c. A *Plea* is not good, where there is double Matter, because no certain Issue can be taken: Though a *Plea* is not double which contains divers Matters, if it would not have answer'd the whole Declaration of the Plaintiff, without alledging all these Matters in it, and which are necessary in the Defendant's Defence.

A Defendant pleading the general Issue, ought to plead so, that the whole Matter in Question may be tried:

And where *Pleading* amounts to no more than the general Issue, that only shall be enter'd. If the Defendant is not obliged to plead a *special Plea*, he may plead the general Issue proper to the Action, and give the special Matter in Evidence: And in many Cases *general Pleadings* are allowed, to avoid Tedioufness and Multiplicity, and the Particulars shall come on the other Side. All necessary Circumstances implied, need not be expressed in the Plea; but when any special or substantial Matter is set forth, it must be specially answered.

The Law requires in every *Plea* two Things, viz. Matter sufficient, and that it may be expressed according to the Forms of Law. Bonds and Deeds are to be pleaded with a *Profert hic in curia*, &c. Also in pleading a Tender, at the putting in of the *Plea*, the Money is to be brought into Court, or the *Plea* will not be accepted; but the Plaintiff shall sign Judgment. A Man cannot plead any Thing afterwards, which he might have pleaded at first; but Surplusage shall never make the Plea vicious, except where it is contrary to the Matter before.

Averment in pleading, usually signifies an Offer of the Defendant to make good, or justify an Exception pleaded in Abatement, or *Bar* of the Plaintiff's Action.—The Word also sometimes signifies the Act as well as the Offer of justifying the Exception.

Averment is two-fold, *General* and *Particular*.

General Averment, is the Conclusion of every *Plea* to the Writ, or in Bar of Replications or other Pleadings (for Counts, or Avowries in Nature of Counts, need not be averred) containing Matter affirmative, and ought to be with these Words, *Hoc paratus est verificare*.

Particular Averment, is when the Life of a Tenant for Life, or Tenant in Tail, is *averred*, &c. An *Averment* contains as well the Matter as the Form thereof.

Demurrer, is a Kind of Pause or Stop, put to the Proceeding of any Action, upon some difficult Point, which must be determined by the Court, before any further Progress can be had therein.

In every Action, the Controversy is either as to Fact or to Law; the first decided by the Jury, the second by the Judge. Now if any Thing turn up in the Cause so rare and difficult, that the Judge cannot pronounce upon it, a *Demurrer* or Stop is made, and a Time taken, either for the Court to consider and agree of it among themselves; or otherwise for the Judges to meet in the Exchequer Chamber, there, after hearing Council on both Sides, to determine what is Law.—This *Demurrer* is expressed in the *English* Records, by *moratur in lege*.

In Common Law, the Defendant sometimes *demurreth* to the Plaintiff's Declaration; and sometimes the Plaintiff *demurreth* to the Defendant's Plea, by averring that it is not a sufficient Plea in Law.

In *Chancery*, the Defendant *demurreth* to the Plaintiff's Bill, averring it to be defective in such and such a Point; and demands the Judgment of the Court thereupon, whether he shall be compelled to make any further Answer thereunto.

By the Statute 4 & 5 Ann. c. 16. upon a *Demurrer* joined in any Court of Record, the Judges shall give Judgment as the Right and Matter in Law shall appear, without regarding any Imperfection or Defect in any Writ, Pleading, or Process; except those which the Party demurring shall set down as Causes of his *Demurrer*, &c. so as sufficient Matter appears, whereupon the Court may proceed to Judgment; and no Exception shall be taken for Default of entering *Pledges* upon a Bill or Declaration, or not alledging the bringing into Court of any Deed mentioned in the Pleadings, Letters testamentary, or of Administration; nor for Omission of *Force and Arms*, and *against the Peace*; or *this he is ready to aver*, or *as by Record*, &c. but the Court shall give Judgment, unless they are sued for Cause.

A *Replication* is an Exception or Answer made, by the Plaintiff to the Defendant's *Plea*; it is to contain Certainty, and not vary from the Declaration, but must pursue and maintain the Cause of the Plaintiff's Action; otherwise it will be a Departure in Pleading, and going to another Matter. When the *Replication* doth not confess and avoid, nor traverse the Matter of the *Bar*, it is not good, and the Defendant may *demur* to it: And if the *Bar* is nought and the *Replication* likewise, the Plaintiff

tiff shall never have Judgment. A *Replication* being entire, and ill in Part, is ill in the whole; and where a Title doth not appear till set forth in the *Replication*, and that is insufficient, there Judgment shall be had for the Defendant for the ill *Replication*. — Sometimes a faulty Plea in Bar is made good by *Replication*; and sometimes the *Replication* is made good by a *Rejoinder*; but if it wants Substance, 'tis not helped.

Note, That the *Replication* is particularly that which the Plaintiff replies to the Defendant's Answer in Chancery, and which is either *general* or *special*. The *special* is grounded upon Matter arising out of the Defendant's Answer, &c. The *general* is so called, from the general Words therein used.

The Defendant's Answer to the Plaintiff's *Replication*, is called *Rejoinder*; and it ought to be a sufficient Answer thereto, and follow and enforce the Matter of the Bar pleaded. — The Defendant is not to *rejoin* upon such Words as are not contain'd in the *Replication* or Plea; and if the Defendant departs from his Plea pleaded in Bar, the *Rejoinder* is not good, because this is uncertain, and to say and unsay, which the Law doth not allow. When the Defendant in his *Rejoinder* pleads new Matter, he must conclude, and *this he is ready to aver*; that the Plaintiff may have Liberty to come in with a *Surrejoinder*, and answer to it.

Therefore the *Surrejoinder* is a second Defence of the Plaintiff's Declaration, and answers the *Rejoinder* of the Defendant.

If the Defendant makes an Answer to the Plaintiff's *Surrejoinder*, that is called a *Rebutter*; and the Plaintiff's Answer thereto is called a *Surrebutter*, but the Parties seldom go so far in Pleading; and after all these there may be a Demurrer.

Note, That the Order in the Court of Chancery is thus: First the Defendant puts in an Answer to the Plaintiff's Bill, which is sometimes also called an *Exception*: The Plaintiff's Answer to this, is called a *Replication*; and the Defendant's Answer to that, a *Rejoinder*; answering to what the Civilians call *Duplicatio*.

Where a Person is arrested upon any Writ returnable before three Weeks of Easter, or one Month of St. Michael, &c. if the Defendant appears and puts in Bail, and the Plaintiff declares before the Effoin-Days of those Terms, then the Defendant is to plead the same Term: But if the Declaration be not deliver'd till after the Effoin-Days, the Defendant has Time to plead, till two Days before the Effoin-Day of the next Term, so as to enter. And it is observed, when the Plaintiff has declared, if his Clerk does not call for an Answer, nor enters the Action in three Terms after the Defendant's Appearance, the Plaintiff may be *non-suited*: Though the Defendant is not obliged to plead till the third Term, where a Copy of the Declaration is not received before the Effoin-Day of the second Term.

When the Defendant has pleaded, if it be a general Issue, the Issue is made up, and the Plaintiff's Attorney may give Notice of Trial.

An *Issue* in Law is the Point of Matter depending in Suit, whereupon the Parties join, and put their Cause to the Trial of the Jury.

Issue is either *general* or *special*.

General Issue seems to be that whereby it is referred to the Jury, to bring in their Verdict, whether or no the Defendant has done any such Thing as the Plaintiff lays down to his Charge. For Example, if it be an Offence against any Statute, and the Defendant pleads Not guilty; this being put to the Jury, is called the *general Issue*. So if a Man complains of a private Wrong, which the Defendant denies, and pleads no Wrong, nor Dissession; and this he refers to the Jury, it is likewise the *general Issue*.

Special Issue, is that wherein special Matters being alleged by the Defendant in his Defence, both Parties join on this Point, and so go to a Demurrer, if it be *Quæstio juris*; or to a Trial by the Jury, if it be *Quæstio facti*; as in Assault and Battery, where the Defendant pleads that the Plaintiff struck first.

There must be in every *Issue*, an Affirmative and Negative; and the Negative should be as broad and full as

the Affirmative, to make the *Issue*.

If there are several Things in a Declaration, upon which an *Issue* may be join'd, and if it is joined in any of them, it will be good; and an Affirmative, and implied Negative, may make an *Issue*.

All *Issues* are to be certain and single, and joined upon the most material Thing in the Cause, that all the Matter in Question may be tried.

An *Issue* must be joined in such a Court that has Power to try it, otherwise it is not well join'd: And where *Issue* is not join'd, there cannot be a good Trial, nor ought Judgment to be given. And in an Action for Damages, according to the Loss which the Plaintiff has sustained, every Part ought to be put in *Issue*. — In Action upon the Case for Service done for a Time certain, the Defendant is to put in *Issue* all the Time alleged in the Declaration. The Place should not be made Part of the *Issue*, in a transitory Action; as it must in real and mixed Actions: But where it is material and a Part of the *Issue*, there the Jury cannot find the Fact in another's Place: Though upon the *general Issue* pleaded, the Jury may find all local Things in another County.

In *real Actions*, Causes grown to *Issue*, are tried by a Jury of twelve Men of the County where the Cause of Action arises; and in criminal Cases, *Issues* ought to be tried in the County where the Offence was committed; but this hath had some Alteration by Statute.

As one of the greatest Privileges of an *Englishman*, is to have his Cause tried by Juries, *i. e.* by twenty-four, or twelve Men, sworn to enquire of a Matter of Fact, and declare the Truth upon such Evidence as shall be delivered them, touching the Matter in Question: Those Juries are to be Freemen, indifferent, and not out-lawed or infamous. Aliens, Men attainted of any Crime, ought not to serve on Juries; and Infants, Persons 70 Years old, Clergymen, Apothecaries, &c. are by Law exempted from serving upon Juries.

Jurors impannelled shall be next Neighbours, most sufficient, and less suspicious; or the Officer that returns them shall forfeit double Damages: And if a Juror takes any Thing of either Party to give his Verdict, he shall forfeit ten Times as much as taken, or suffer a Year's Imprisonment. — Also *Issues* are to be levied on Jurymen for Non-Appearance; but on a reasonable Excuse, proved by the Oaths of two Witnesses, the *Issues* for Default may be discharged.

By Statute, the Qualification of Jurors is declared to be 10*l.* *per Annum* Freehold, and of Talefman 5*l.* a Year.

The late Statute, *For better regulating Juries*, exacts that Lists of Jurors qualified, according to former Laws, are to be made from Rates of Parishes, and yearly fixed on Doors of Churches, &c. twenty Days before *Michaelmas*, that so Notice may be given of Persons omitted, or inserted by Mistake; and returning Officers wilfully omitting Freeholders qualified, or inserting others, shall forfeit 20*s.*

The Sheriffs on the Return of Writs of *scire facias*, are to annex a Pannel of Names and Additions of a competent Number of Jurors named in the Lists, not less than forty-eight, or more than seventy-two (without Direction of the Judges) who shall be summon'd to serve at the Assizes, &c.

In criminal Cases, the Juries are to be chosen (*not packed up*) out of the same Class or Rank, with the Accused; and if he be a Foreigner, he may demand a Jury half Foreigners, and half *Englishmen*.

There are ordinarily thirty-six impannelled, whereas, in criminal Cases, the Person accused, has the Liberty to challenge, or set aside twenty-four, and to pick out twelve at his Pleasure. — These twelve are present at the Trial, after which they withdraw into a Chamber by themselves, where they are to be shut up without Fire or Candle, Victuals or Drink, till such Time as they agree in their Verdict, and declare unanimously, that the Defendant is either guilty of the Charge laid against him, or Not guilty. Upon which the Judge passes the Sentence prescribed by the Law.

In *England* there are three Sorts of Trials, *viz.* one by *Parliament*, another by *Battle*, and a third by *Assize*, or *Jury*.

The Trial by *Affize* (let the Action be civil or criminal, publick or private, personal or real) is referred for the Fact to a Jury, and as they find it, so passes the Judgment.

This Jury is not only used in Circuits of Justices Errant, but also in other Courts and Matters of Office; but though it appertains to most Courts of the common Law, yet it is most remarkable in the half Year Courts of the Justices Errant, commonly called the *great Affizes*, and in the Quarter-Sessions: And in them it is most ordinarily called a *Jury*; in other Courts it is usually called an *Inquest*; and in the Court-Baron a *Jury of the Homage*.

In the *general Affize*, there are usually many Juries, because there are a great many Causes, both civil and criminal, commonly to be tried; whereof one is called the *Grand Jury*, and the rest the *Petit-Juries*; of which it seems there should be one in every Hundred.

Grand Jury consists of twenty-four good and substantial Gentlemen, or some of the better Sort of Yeomen, chosen indifferently by the Sheriff of the whole Shire, to consider of all Bills of Indictment, preferred to the Court; which they do either approve, by writing upon them *Billa vera*; or disallow by endorsing *Ignoramus*.

Such as they do approve, if they touch Life and Death, are further referred to another Jury, to be considered of, because the Case is of much Importance; but others of lighter Moment, are upon their Allowance, without more ado, fined by the Bench; except the Party traverses the Indictment, or challenge it for Insufficiency; or remove the Cause to a higher Court by *Certiorari*; in which two former Cases, it is referred to another Jury, and in the latter, transmitted to a higher Bar. And presently upon the Allowance of this Bill, by the grand Inquest, a Man is said to be *indicted*. Such as they disallow, are delivered to the Bench, by whom they are forthwith cancelled or torn.

Petit Jury consists of twelve Men at least, and are impannelled as well upon criminal, as upon civil Causes: Those that pass upon Offences of Life and Death, bring in their Verdict, either Guilty or Not guilty; whereupon the Prisoner, if he be found guilty, is said to be *convicted*, and receives Judgment or Condemnation, or otherwise is acquitted and set free.

Those that pass upon civil Causes real, are all, or so many as can conveniently be had, of the same Hundred where the Land or Tenement doth lie, being four at least; and they, upon due Examination, bring in their Verdict, either for the Demandant or Tenant.

The Answer of the Jury given to the Court, concerning the Matter of Fact in any Cause, committed by the Court to their Trial and Examination, is called *Verdict*, from *vere dictum*, q. d. *dictum veritatis*, the Dictate of Truth.

A *Verdict* is either *general* or *special*.

General Verdict, is that which is brought into the Court in like general Terms, as the general Issue: As in Action of Disseisin, the Defendant pleads no Wrong, no Disseisin. — Then the Issue is general, whether the Fact be wrong or not; which being committed to the Jury, they, upon Consideration of the Evidence, come in and say, either for the Plaintiff, *that it is a wrong Disseisin*; or for the Defendant, *that it is no Wrong, no Disseisin*.

Special Verdict, is when they say at large, that such and such a Thing they found to be done by the Defendant; declaring the Course of the Fact, as in their Opinion it is proved; and as to the Law, upon the Fact proving the Judgment of the Court.

This *Special Verdict*, if it contains any ample Declaration of the Cause from the Beginning to the End, is called a *Verdict at large*.

The *Verdict* must answer the Issue in all Things, or it will not be good; but if the Jury find the Issue and more, it is good for the Issue, and void for the rest; and where they find a Point in Issue, and a superfluous Matter over, that shall not vitiate the *Verdict*.

If a Jurymen withdraws from his Fellows, or keeps them from giving their *Verdict*, without assigning any Reason, he shall be fined; but not if he differs from them in Judgment: And if Jurors eat or drink at the Cost of him for whom they give their *Verdict*, before they are a-

greed; or cast Lots whether they shall find for the Plaintiff, or Defendant; or if they send for a Witness, after gone from the Bar, and he repeats his Evidence again; and where a *Verdict* is given contrary to the Evidence, and against the Directions of the Court, &c. in all those Cases the *Verdict* may be set aside.

When a *Verdict* is found for the Plaintiff, and he will not enter it, the Defendant on Motion may compel him to do it, or he may enter it himself; and after any *Verdict* is returned in Court, it cannot be amended. On Return of *Verdicts*, in all civil Cases, given at the Affizes, to the Courts above, the Judges there give Judgment for the Party for whom it is found.

The *Judgment* is the End of the Law; it is the Determination or Sentence of the Court upon the Suit. Also Judgment may be given on Default, Confession, Demurrer, and upon Trial of the Issue.

A *Judgment* given contrary to the Verdict found in the Cause, is not good; for it is to be warranted by the Verdict.

Judgments are not only to be signed by a Judge, but enter'd on Record, before which they are no *Judgments*; and the Plaintiff's Attorney, after the *Postea* is brought into Court, if the Rule for that Purpose is out, may enter *Judgment* for his Client, by the Course of the Court. Though if *Judgment* be enter'd for more than the Plaintiff's Demands in his Declaration, or of any Thing mention'd therein, it is erroneous.

Four Days are allowed in the King's Bench to move in Arrest of *Judgment*, and the Defendant hath all the Term wherein a Verdict was given, to speak any Thing to arrest it, if the Plaintiff has not given a four Days Rule, and signed his Judgment; afterwards it is too late, and he is put to his Writ of Error.

Judgment may be stayed or arrested for Want of Notice of Trial; where the Plaintiff before the Trial treated the Jury; if the Record differs from the Deed pleaded; or for some material Defect in Pleading, &c. But no Council ought to move in Arrest of Judgment, except the Roll wherein the Judgment is enter'd be in Court: And here all Matters of Fact must be made out by Affidavit.

A *Nonsuit* is where a Man brings an Action, and doth not appear and prosecute it with Effect, or upon Trial refuseth to stand a Verdict; then he becomes nonsuited, which being recorded, the Defendant recovers his Costs against him: And the Effect of a *Nonsuit* is to set the Matter at large; whereon the Plaintiff may commence his Action again, and proceed upon a new Declaration.

When a *Judgment* is signed, an *Execution* may be taken immediately upon it; which *Execution* is the obtaining Possession of the Things recovered by that Judgment.

If the *Execution* be not issued within a Year and a Day after the Judgment has been signed, when there is no Fault in the Defendant, as Injunction, Writ of Error, &c. there must be a *Scire facias* to revive the Judgment; but where the Plaintiff sueth out any Writs of *Execution* within the Year, he may continue them afterwards.

If a Person arrested in the Court of King's Bench, puts in Bail, and the Plaintiff recovers, if the Defendant doth not surrender himself, Execution may be taken out against the Principal, or Bail; though if the Plaintiff takes the Bail, he shall never after take the Principal in *Execution*: If two Persons be Bail, although one is in *Execution*, the Plaintiff may take the other; but if the Principal be in *Execution*, he cannot meddle with the Bail. And Writ of *Scire facias* issues against the Bail, after Process against the Principal is returned, *Nisi est inventus*.

There are two Sorts of *Executions*; one *final*, another with a *quousque*, as only tending to an End.

Execution final, is that which maketh Money of the Defendant's Goods, or extendeth his Lands, and delivers them to the Plaintiff; for this the Party accepts in Satisfaction; and this is the End of the Suit, and all that the King's Writ commands to be done.

Execution with a quousque, is that which only tends to an End; as in the Case of a *Capias ad Satisfactionem*, &c. This is not final, but the Body of the Party is to be taken, to the Intent and Purpose to satisfy the Plaintiff; and

and his Imprisonment is not absolute, but till he doth satisfy; so that the Body is but a Pledge for the Debt.

Note, That the *Capias ad Satisfaciendum*, is a judicial Writ, which issues out of the Record of a Judgment, where there is a Recovery in the Courts at *Westminster* of Debt, Damages, &c. to take the Body of the Party in Execution, till Satisfaction be made. It is usual to take out this Writ when the Defendant has no Lands nor Goods, whereof the Debt recovered may be levied; and where the Body is taken upon a *Capias ad Satisfaciendum*, and the Writ returned and filed, it is an absolute and perfect Execution against the Defendant; and no other Execution can be against his Lands or Goods: Though this is unless the Defendant escapes, or dies in Execution, &c. for where a Person dies in Execution, his Lands and Goods are liable to satisfy the Judgment; and a new Execution may issue. An Execution may be stayed, or set aside, as irregular and erroneous, by *Superfedeas*, &c.

To redress a false Judgment, given in any Court of Record, having Power by Charter of Prescription to hold Plea of Debt or Trespass above 40s. a *Writ of Error* lies; which is returnable in the *King's Bench*. And if upon the Transcript of the Record sent into that Court, it appears to the Court that there is Error in the Record or Process, or in giving of Judgment, then the Judgment is reversed; but if there appear to be none, then is the Judgment affirmed with double Costs.

A *Writ of Error* lies out of Chancery upon all Judgments given in the *King's Bench*, when the Suit is by Bill (unless the King is Party thereto) returnable in the Exchequer Chamber before the Judges of the *Common Pleas*; and Barons of the Exchequer, &c. who may examine the Errors, and reverse or affirm the Judgment. And after the Errors are examined, and Judgment affirmed or reversed, the Record is sent back to the *King's Bench*, to proceed and award Execution. But if the Suit is by *Original*, or on a *qui tam*, &c. where the King is Party, *Writ of Error* lies only to the Parliament.

A Judgment given in the *Common Pleas* is to be reversed by a *Writ of Error*, made returnable in the *King's Bench*; and Error shall not be brought in Parliament: Though where a *Writ of Error* is brought in B. R. upon a Judgment given in C. B. and the Judgment is reversed or affirm'd, the Party griev'd may have a *Writ of Error*, returnable in Parliament.

Erroneous Judgment, in the Court of Exchequer, is to be examined by the Lord Chancellor, &c. with some of the Justices, and such other grave Persons as they think fit; and if any Error be found, they shall correct the Rolls, and send them into the Exchequer, there to make Execution, &c.

The *Writ of Error*, may not be brought in the Exchequer-Chamber, upon a Judgment in B. R. but in Actions of Debt, Detinue, Trespass on the Case, Covenant, or Ejectment, which are the Actions mention'd in *Stat. 27. Eliz. c. 8.* and that Statute is only to relieve on the Merit of the Cause, as it stood on the first Judgment; and there can be no new *Writ of Error*, after that Judgment is affirmed or reversed; so that if the Merits of the first Judgment be examined before a *Sine facias* is brought, the Exchequer-Chamber having executed their Authority, can do nothing in it. And the Court of Exchequer-Chamber have not any Power but to reverse or affirm the Judgment, &c. for they cannot make Exception.

The Reversal in the Exchequer-Chamber, is *res judicata*; no *Writ of Error* lies on such Judgment, except in Parliament, and it is to be by six Judges at least. But it has been resolved, that Errors in Fact cannot be assigned in the Exchequer-Chamber; yet by some Authorities, they may be assigned as Errors in Law: And according to later Resolutions, the Court of Exchequer may by Virtue of this Statute, reverse Judgments for Errors in fact.

Writ of Error cannot be brought on any Record which is not a Judgment: It lies not on an interlocutory Judgment, but it must be a final Judgment after Verdict, &c.

A *Writ of Error* may not be had to reverse a Judgment

by Default, before a *Writ of Enquiry of Damages* issues, and is executed, that the Verdict of the Jury, and interlocutory Judgment, may be made a perfect final Judgment, upon which alone the *Writ of Error* is to be brought. But on Judgment by Default in Ejectment, it lies before a *Writ of Inquiry of Damages*, and Judgment thereupon; because in this Case the Judgment already is perfect to recover the Term. Where a Judgment is pleaded in Bar of another Action, &c. and Judgment given on the Plea, *Writ of Error* may be had to reverse the second Judgment.

Note, That the Punishment of him, who being called into Law, and lawfully sought, does (after an original Writ, and three Writs of *Capias*, *Alias*, and *Pluries*, returned by the Sheriff, with a *non est inventus*, and an Exigent with a Proclamation, awarded thereupon) contemptuously refuses to appear, is an Outlawry.

He must also be called at five County Court-Days, a Month between each one; and if he appears not in that Time, *pro ex lege tenebitur, cum Principi, non obediat, nec legi, & ex tunc ex legabitur*, i. e. he shall be pronounced to be out of the King's Protection, and deprived of the Benefit of the Law. The Effect of which is, if he be outlawed at the Suit of another, in a civil Cause, he shall forfeit all his Goods and Chattels. And then according to *Bracton*, he may perish without Law.—A Minor, or a Woman cannot be outlawed.—All suing to Outlawry, in civil Actions, is practised only when a Defendant is not easy to be taken, or hath not sufficient Estate in the Country to be summoned; if where the Party is well known, is sufficient, and may be arrested, the Plaintiff outlaw him, he shall be order'd to reverse it at his own Charge, on Motion, and Affidavit made of the Matter.

COURT OF COMMON PLEAS.

Sir *Edward Coke* is of Opinion, that the Court of *Common Pleas* was constituted before the Conquest, and was not created by *Magna Charta*, at which Time there were *Justiciarii de Banco*, &c.

There are four Judges of this Court, created by Letters Patent, of whom the Chief is a Lord by his Office; and is called *Dominus Justiciarius Communium Placitorum, vel Dominus Justiciarius de Banco*. And the Seal of the Court is committed to the Custody of the Chief Justice.

The Lord Chief Justice, with his Assistants, hear and determine all common Pleas in civil Causes, as distinguished from the King's Pleas: And the Jurisdiction of this Court is general, like that of B. R. and extends itself throughout England. It holds Pleas of civil Actions at common Law, between Subject and Subject, as well Actions real, as personal and mixed; and it seems to have been the only Court for all real Causes: But this Court cannot regularly hold Plea in any Action real or personal, &c. but by *Writ* out of Chancery, returnable here; except it be by Bill, for or against an Officer, or other privileged Person of the Court.

All Actions belonging to this Court, come thither, either by Original, or Arrest, and Outlawries; or by Privilege or Attachment, for or against privileg'd Persons; or out of inferior Courts, not of Record, by *Pone, Recordare, Accedas ad Curium*, *Writ of false Judgment*, &c. And Actions popular, *Decies tantum*, of Champarty, Maintenance, &c. are also cognisable by this Court; as are Actions, penal of Debts, &c. upon any Statute. And besides Jurisdiction for Punishment of its Officers and Ministers; the Court of *Common Pleas*, may grant Prohibitions to temporal and ecclesiastical Courts, &c.

The Officers of this Court are, the *Custos Brevium*, *Prothonotaries*, *Secundaries*, *Clerk of the Warrants*, *Clerk of the Essoins*, *Filazers*, *Clerk of the Seal*, *Exigenters*, *Clerk of the Outlawries*, *Clerk of the Juries*, *Clerk of the Treasury*, *Clerk of the Errors*, *Chirographer*, *Clerk of the King's Silver*, *Clerk of the Inrolments*, a *Proclamator*, *Crier*, *Tiptaves*, and the *Warden of the Fleet Prison*.

The *Custos Brevium*, is the chief Clerk in this Court, whose Office is in the King's Gift: He receives and keeps all Writs, and puts them upon Files; every Return

turn by itself; and at the End of each Term receives of the Prothonotaries all the Records of the *Nisi Prius*, called the *Posteas*.

The Writs are first brought in by the Clerks of the Assize of every County to the Prothonotary who entered the Issue in that Matter, to enter Judgment. Four Days after the Return the Prothonotary enters the Verdict and Judgment thereupon, into the Rolls of the Court, and then delivers them over to the *Custos Brevium*.

The *Custos Brevium* also makes Entry of Writs of Covenant, and Concords on Fines; and makes Copies and Exemplifications of all Writs and Records in his Office, and of all Fines levied; the Fines, when engrossed, are divided between the *Custos Brevium* and Chirographer, the former keeping the Writ of Covenant and the Note, the latter the Concord and Foot of the Fine.

The *Prothonotaries* enter and inroll all Declarations, Pleadings, Assizes, Judgments, and Actions; they also make out all judicial Writs, as the *Venire facias* after Issue joined; *Habeas Corpus* for bringing in of the Jury; *Distringas Jurator*, Writs of Execution and Seisin, of Superfedeas, of Privilege, &c. They inroll all Recognizances acknowledged in that Court, all common Recoveries; make Exemplifications of Record, &c.

The *Secondaries* are assistant to the Prothonotaries in the Execution of their Offices; and they take Minutes, and draw up all Orders and Rules of Court. Here are three *Clerks of the Judgments*, one under each Prothonotary.

The *Clerk of the Warrants*, enters all Warrants of Attorney for the Plaintiffs and Defendants in Suits; and inrolls all Deeds of Indenture of Bargain and Sale, which are acknowledged in Court, or before any Judge out of the Court: And it is his Office to estreat into the Exchequer all Issues, Fines, and Amercement, which grow due to the King in this Court, for which he has a standing Fee, or Allowance from the Crown.

The *Clerk of the Effoins*, keeps the *Effoin-Roll*, or enters *Effoins*: He also provides Parchment, cuts it into Rolls, marks the Number on them, delivers out all the Rolls to every Officer, and receives them again when written.

The *Filazers*, are Officers in the Court of Common-Pleas, so called because they file the Writs, whereon they make out Process.

There are fourteen *Filazers* in the several Divisions, and Counties of England. They make out all Writs and Process upon original Writs, issuing out of the Chancery, as well real, as personal and mixed, returnable in that Court.

In Actions merely personal, where the Defendants are returned summoned, they make out Pones or Attachments; which being returned and executed, if the Defendant appears not, they make out a *Distringas*, and so *ad infinitum*, or till he does appear.

If he be returned *nihil*, then Process of *capias infinite*, if the Plaintiff will; after the third *Capias*, the Plaintiff may proceed to Outlawry, in the County where his Original is grounded, and have an Exigent with Proclamation.

The *Filazers* likewise make out all Writs of View in real Actions, where the View is prayed, and upon Replevin's and Recordari's Writs of *return habendo*, second Deliverance, and Writs of Withernam.—In real Actions, Writs of *grand* and *Petit cape* before Appearance.

They enter all Appearances and special Bail, upon any Process made by them: They make the first *Scire facias* upon special Bails, Writs of Habeas Corpus, *Distringas nuper vicecomitem vel Balivum*, and *Duces tecum*; and all Superfedeas's upon special Bail or Appearance, &c. Writs of Habeas Corpus *cum causa*, upon the Sheriff's Return that the Defendant is detained with other Actions; Writs of Adjournment of a Term, in case of Pestilence, War, or publick Disturbance.

The *Clerk of the Seal*, is an Officer that seals all Writs, judicial and ministerial, and also of mesne Process made by the *Filazers*; likewise Writs of Outlawry and Superfedeas, and all Patents and Exemplifications, and takes certain Fees for the same, for which he is accountable to

the Master of this Office, and the Lord Chief Justice of the Court.

The *Exigentes*, are four Officers who make out all Exigents and Proclamations, in all Actions where the Process of Outlawry lies, and have for every common *Exigent* 1 s. and for every ordinary Proclamation 6 d. but if longer than ordinary, they take in Proportion to their Length.

The *Clerk of the Outlawries*, is Servant to the Attorney General, for making out the *Capias ut lagatum*, on return of the Exigent after Outlawry, and the Name of the Attorney-General is to be to every one of these Writs; and 1 d. only is paid for sealing this Writ, because it is supposed to be at the King's Suit; whereas 7 d. is paid for the Seal of every other Writ.

The *Clerk of the Juries*, is an Officer who makes out the Writs called *Habeas Corpus*, and *Distringas*, for the Appearance of Juries, either in Court or at the Assizes; after the Pannel is returned upon the *Venire facias*.

The *Clerk of the Treasury*, has the Charge of keeping the Records of the Court, and makes up and seals all Records of *Nisi Prius*: He makes all Exemplifications of Records lodged in the Treasury, and Copies of Issues, Imparances and Judgments, and of all Informations and Recognizances on Record there; and he has the Fees due for all Searches. He is Servant to the Chief Justice, and is said to be removeable at Pleasure; but all other Officers of this Court are for Life: And there is an Under Clerk of the Treasury for Assistance, who hath some Fees and Allowances; also an Under-keeper that keeps the Keys of the Treasury-Door, &c.

The *Clerk of the Errors*, transcribes and certifies into the King's-Bench the Tenor of the Records of the Cause or Action, upon which the Writ of Error, made by the Cursitor, is brought there to be determined.

The *Chirographer*, is an Officer who engrosses Fines, acknowledged in that Court, into a perpetual Record (after they have been examined, and passed by other Officers) and writes and delivers the Indentures thereof to the Party. He makes two Indentures, one for the Buyer, the other for the Seller; and a third indented Piece, containing the Effect of the Fine, and called the *Foot of the Fine*; and delivers it to the *Custos Brevium*. The same Officer also, or his Deputy, proclaims all Fines in Court every Term, and endorses the Proclamations on the Back-side of the Foot; keeping withal the Writ of Covenant, and the Note of the Fine.

The *Clerk of the King's Silver*, is an Officer to whom every Fine is brought, after it has been with the *Custos Brevium*, and by whom the Effect of the Writ of Covenant is entered in a Paper-Book; and according to that Note all the Fines of that Term are also recorded in the Rolls of the Court.

The *Clerk of the Enrolments*, is an Officer under the three elder Judges of the Court of Common Pleas, and removable at their Pleasure.

In prosecuting Suits in the *Common Pleas*, first instructions are drawn for common or special Writs, and delivered to the *Filazer* of the County; and here the *Precipe* and *Pone* serves both for the *Original* and the *Capias*; and if you set down the Return of your *Capias*, the *Filazer* of Course takes Care for the *Original*.

Note, That a *Precipe* or *Precipe quod reddat*, is a Writ of great Diversity both as to Form and Use, extending as well to Writs of Right, as to other Writs of Entry and Possession. It is sometimes called a *Writ of Right close*, as when it issues out of the Court of Chancery close; sometimes a *Writ of Right patent*, as when it issues out of Chancery patent, or open to any Lord's Court, for any of his Tenants deforced against his Deforcestor.

Pone, is a Writ whereby a Cause depending in the County or other inferior Court, is removed to the *Common Pleas*, or sometimes the King's-Bench.

Pone, per vadium, is a Writ commanding the Sheriff to take Surety of one for his Appearance at a Day assigned.

If it be an Action of Debt, the *Precipe* for a special Writ runs thus:

Somerfet. Command C. D. late of B. in your County.

ty, that he render to A. B. twenty Pounds, which he owes to, and unjustly detains from him.

Returnable in fifteen Days from the Feast of Easter.

T. Vaughan.

On any Speciality, as Bond, &c. or if it be upon an Indenture, you must draw your *Precipe*, with the *Alias Dist.* as it is literally therein: And when the Action is bailable, the Plaintiff must make an Affidavit of the Debt, being ten Pounds, or above, according to the Statute 12 George I. Also where the Cause of Action is Debt, and requires Bail, it has been held the best Way to take out an *ac etiam capias*, the Original to which is always a bare *clausum fregit*; and when you come to Judgment thereon, you may file a new Original to warrant such Judgment.

But if the *Capias* be special, by *Precipe quod reddat*, &c. and there should be any Mistake, either in the Name *Alias Distus*, or Sum, it may be pleaded in Abatement; and a new Original will not cure it, but you are obliged to discontinue your Action, paying Costs, and to begin *de novo*.

All *Precipes* that he renders, &c. are fineable; and so are the special *Capias's*; and to avoid the Fine, you may draw a *Pone* for a *Capias*, only in Debt.

If the Defendant lives in the Country, as for Instance in *Somersetshire*, and the Cause of Action arises in *London*, and therefore you would try the Cause there; in this Case you must make out a *Testatum* into the County where the Party lives, by which it is suggested, that a *Capias* had before been taken out in *London*, and that a Sheriff there made a Return thereto, that the Defendant was not to be found in their Balliwick, &c. and when the Defendant is taken, he is to put in Bail with the Filazer of *London*, to answer to the Plaintiff upon the Writ made out there.

Note, That a *Testatum* is a Writ in personal Actions, where, if the Defendant cannot be arrested on a *Capias* in the County where the Action is laid, but is returned *non est inventus* by the Sheriff, this Writ shall be sent into another County, where such Person is thought to be, or to have wherewithal to satisfy the Demand. It is called *Testatum*, because the Sheriff has before testified, that the Defendant was not to be found in his Balliwick.

If a Defendant be within a Liberty, which the Sheriff cannot enter upon a *Capias*, you may get the Filazer of the County to make out a Writ *non omittas*, directed to such Liberty where the Defendant resides, without having a *Capias* first from him; and the Method for Expedition's Sake now is to make the *non omittas* at once, suggesting the Matter as if it had been done; so the *Capias* and Writ of *non omittas* are made out at the same Time, and you return the *Capias* yourself.

Note, That a *Non omittas* is a Writ, which lies where the Sheriff having delivered a Writ or Process to a Bailiff of a Franchise, in which the Party it is to be served on dwells, and the Bailiff having refused or neglected to serve it, upon the Sheriff returning that he delivered it to the Bailiff, this second Writ shall be directed to the Sheriff, charging him to enter the Franchise, and execute the King's Command either by himself or Officer.

Appearances upon Writs in the *Common-Pleas*, must be entered with the Filazer, or the Defendant shall forfeit 5*l.* but on Writs of Privilege, both common Appearances and special Bail, are entered upon the Prothonotary's Remembrance.

If the Cause of Action be under 10*l.* (on Writs out of this or any other superior Court) and the Plaintiff shall proceed by way of Process against the Defendant, if such Defendant does not appear at the Return of the Process, or in four Days after, it shall be lawful for the Plaintiff, upon Affidavit being made and filed in the proper Court, of the personal Service of such Process, to enter a common Appearance for the Defendant, and to proceed thereon, &c. And there is to be a Notice on such Process, for the Defendant to appear at the Return, &c. and a Defendant not appearing then, or with-

in eight Days after it, Affidavit of the Service of the Process to be made before any Judge or Commissioner of the Court, or the Officer for entering Appearances; Stat. 12 Geo. I. and 5 Geo. II.

The Plaintiff must make Oath of his Debt, or Cause of Action, when 10*l.* or above, before the issuing of the Writ, and the Sum sworn must be endorsed thereon; for which Sum, and no more, Bail is to be taken.

In Actions of Debt, &c. it has been observed, that the Reason of Bail is upon a Supposition of the Law, that the Defendant flies to the Judgment of the Law; which is grounded upon his not appearing at first, &c. and when a Man is taken on a *Capias*, he shall not be discharged till he gives Bond to appear; except the Plaintiff or his Attorney consent to an Appearance without Bail.

On a *Habeas Corpus* or *Cepi Corpus*, where special Bail is required, the Bail is not to be taken without Consent of the Plaintiff; and upon Writs of *Habeas Corpus* directed to the Courts of *London* and *Westminster*, which are returnable *immediate*, the Defendant may be bailed, giving Notice of the Names of the Bails, and before what Judge he intends to put it in; but it must be in eight Days, and Exception is to be taken within twenty Days.

If special Bail put in by the Defendant in any Suit, be excepted to, the Defendant shall perfect his Bail within four Days after Exception taken; in default whereof the Plaintiff may proceed upon the Bail-Bond: And in all Cases where Bail shall be filed on Writs of Error, such Bail shall likewise be perfected within the like Times, or in default thereof the Clerk of the Errors of this Court shall *non-pros* such Writ of Error. In Cases wherein Bail-Bonds shall be taken by the Sheriffs, if the same Bail be put in above, the Plaintiff may except against such Bail, and it shall not stand good and absolute.

Where Bail-Bonds are taken in *London* and *Middlesex*, they shall not be put in Suit till four Days after the Appearance-Day of Returns of Writs; nor in any other Country till after eight Days.

If the Defendant puts not in Bail when required, the Plaintiff is to get the Sheriff to assign over his Bail-Bond, and take out his *Capias* upon it, (directed to the Coroner if the same Sheriff be an Officer) but that Writ, 'tis said, requires only an Appearance: And if the Plaintiff be nonsuited, and then commences a new Action for the same Cause, he shall not have special Bail in the new Action, though he might have insisted upon it in the First.

The Method to put in Bail in the *Common Pleas* in *London* or *Middlesex*, is not by filing a Bail-piece, but it is done by an Entry in the Filazer's Book; though the Filazers vary a little in the Manner thereof.

In *London* you call upon the Filazer and give him Notice when the Bail are ready, and then he will attend with you at the Judge's Chamber, and there the Bail enter into a Recognizance.

In taking Bail to Actions, depending in the Court of *Common Pleas*, before Commissioners in the Country; first a Copy of the Writ on Parchment is to be brought to the Commissioner taking it, on which the Recognizance or Bail-piece must be drawn and engrossed, and then the Bail is taken before such Commissioners: And the Affidavit of the due taking of every such Bail, shall be made, either before some Judge of C. P. to whom the Bail shall be transmitted, or before some Person who shall have Power to take Affidavits in Matters and Causes depending in this Court.

All Bails taken by any Commissioner within the Distance of 40 Miles from the Cities of *London* and *Westminster*, are to be transmitted to the Lord Chief Justice of the *Common Pleas*, or to one of the Justices of the said Court, within ten Days after the Taking thereof: And all Bails taken by any Commissioner above the Distance of 40 Miles from *London* and *Westminster*, shall be transmitted within 20 Days after the Taking, unless all the said Justices shall be in their Circuits, and then as soon as any of them shall be returned to *London* out of his Circuit.

The Plaintiff in any Action before the End of the next Term, after the Return of the Process, ought to declare against the Defendant; but it is now usual for the Plaintiff,

tiff, after the Return of the Writ, to have two Terms to make out his Declaration; and if the Plaintiff doth not declare within that Time, the Defendant upon a Rule given, may sign a *Non-pros*, and have Costs, usually, 1 l. 6 s. 8 d. for Recovery whereof Execution may be taken out, or Action brought.

If the Defendant appears the first Term, and give no Rule to declare, his Attorney the second Term may be compelled to accept of a *Declaration* with Imparance; but if the Plaintiff declares not the second Term, tho' the Defendant gives no Rule, the Plaintiff may be nonsuited at the End of the second Term, upon a Continuance entered by *Dies Datus*. If the Day to appear, be upon the first Return of any *Hilary*, or *Trinity* Term, no Imparance will be granted, without Consent or Rule of Court: And after Rules to declare are out, no Nonsuit shall be had for Want of a *Declaration*, unless the Plaintiff's Attorney be first called on for his *Declaration*.

Declarations to be delivered, with Notice to plead in four Days in *London* or *Middlesex*; and in other Counties, above 20 Miles off, within eight Days, &c.

If any Plaintiff shall declare against any Person in Custody of the Warden of the *Fleet*, or of any Sheriff, &c. and does not further proceed to Judgment within three Terms after the Declaration delivered, inclusive of the Term wherein delivered; or if a Plaintiff having obtained Judgment in this Court against any Prisoner, shall not charge him in Execution thereupon, within two Terms next after the Judgment had, including the Term in which the said Judgment shall be signed, the Defendant in Prison may be discharged out of Custody, by Superfedeas allowed by one of the Justices of this Court, if Cause be not shewn by the Plaintiff why he had not proceeded, upon Notice given by the Defendant's Attorney, and Oath made thereof, &c.

The Plaintiff having declared, and given Rules for Answer, the Defendant is to deliver his Plea to the Plaintiff's Attorney; and if he be not to be found, or refuseth it, 'tis to be left in the Office to save a Judgment.

In every Plea, except to a *Scire facias*, it is necessary that the Defendant should come and defend the Force and Injury laid to his Charge, to make him a Party to the Matter in Variance; that is to such a Charge, which the Plaintiff has given Pledges that he will maintain against him: But in a *Scire facias*, the Defendant is not in Law a Party to the Suit till he appears, nor is there any Wrong or Injury against him; and when he appears, he may plead by *venit* and *dicit* only.

Note, That *Scire facias* is a judicial Writ, most commonly used to call a Man to shew Cause to the Court whence it issues, why Execution of a Judgment passed, should not be made out?—This Writ is not granted till a Year and a Day be elapsed after a Judgment given.—*Scire facias* upon a Fine, lies only after a Year and a Day after the Fine levied: Otherwise it is the same with the Writ of *Habere facias seisinam*, which is a judicial Writ, which lies where a Man has recovered Lands in the King's Court, directed to the Sheriff, commanding him to give him the Seisin thereof. This Writ sometimes also issues out of the Records of a Fine, directed to the Sheriff of the County, where the Lands lie; commanding him to give to the Cognizee, or his Heirs Seisin of the Land, whereof the Fine is levied. The Writ lies within the Year after the Fine or Judgment, upon the *Scire facias*; and may be made in divers Forms.

If in any Action the Defendant pleads a *general Plea* or *Issue*, as is most usual, there is no more requisite, but that the Attorney for the Defendant do put his Hand to the Plaintiff's Attorney's Docket Book; and that being done, the Plaintiff's Attorney is to draw up the *Plea*, and make a Copy of the Issue, and deliver it to the Defendant's Attorney, who must receive it, and pay for entering his *Plea*; and then they usually give Warning for Trial. But if the Defendant pleads specially, the Plea is to be under a Serjeant's Hand, and given to the Plaintiff's Attorney; also if the Plaintiff replies specially, or the Defendant demurs to a Declaration, it is the same.

The Rules to plead must be entered in the Prothonotary's Office, that the Plaintiff's Attorney declares in, by the Secondary there, for which he is paid 16 d. And if the Defendant on Rule to answer, do not plead before the Rule is expired, the Attorney for the Plaintiff may afterwards enter up Judgment by *Nil dicit*; and the Defendant on pleading any general Issue, may (after Rule given) nonsuit the Plaintiff, if he doth not enter his Issue; and thereupon he may get Costs signed by the Prothonotary, and enter up Judgment. After a *respondeas oyster*, on Demurrer and Judgment, and Rule given, the Defendant is to plead forthwith, or the Prothonotary will sign Judgment: In other Cases it has been adjudged a standing Rule, that the Prothonotary must receive a *Plea* left in the Office at any Time before Judgment signed, tho' the Rule to plead be out.

By Order *Mich. 1 Geo. II.* where special Writs are made returnable, the first Return in *Hilary* or *Trinity* Term, or the first or second Return in *Easter* and *Michaelmas* Term, unless the Defendant pleads in four Days after the Appearance of the Return, Judgment will be entered by Default, &c. And by Order *Mich. 3 Geo. II.* upon all Process sued out of this Court returnable the first or second Return of any Term, if the Plaintiff declares in *London* or *Middlesex*, and the Defendant lives within twenty Miles of *London*, the Defendant shall plead within four Days after such Declaration delivered, without any Imparance: And in case the Plaintiff declares in any other County, or the Defendant lives above twenty Miles from *London*, the Defendant shall plead within eight Days after the Declaration delivered, without any Imparance; and in Default of pleading as aforesaid, the Plaintiff may sign his Judgment. Also the Declarations delivered pursuant to this Rule, must be delivered with Notice to plead at such Times accordingly.

Oftentimes where the Plaintiff's Action is just and right, the Defendant's Attorney, without any pleading, will yield to a Judgment, either by *non sum informatus*, or Confession, so that the Plaintiff will stay Execution, till a Time agreed upon: This may be done on the Declaration, upon which Judgment you may get Costs taxed by the Prothonotary, and the Defendant will be thereby saved in his Person and Charges.

But if the Attorney for the Defendant pleads to the Action, then you may join Issue, and go to Trial by *Nisi Prius*, at the next Assizes for the County.

Note, That *Nisi Prius* is a Writ judicial, which lies in Cases where the Jury being impannelled and returned, before the Justices of the Bank, one of the Parties requests to have such Writ, for the Ease of the Country, whereby to will the Sheriff to cause the Inquest to come before the Justices in the same Country at their coming thither. It is called a Writ of *Nisi Prius*; and its Effect is, that the Sheriff is hereby commanded to bring to *Westminster* the Men impannelled at a certain Day, before the Justices, *Nisi prius justic. Domini Regis ad assisas capiendas venerint*, that is, unless the Justices go before that Day into such County to take Assizes.

Note, also, That before I conclude this Treatise, I must give a short Description of all the different Writs, Bills, Process, &c. made use of, to arrest the Body of the Defendant, viz. of a *Capias*, *alias Capias*, *Pluries facias*, *Latitat*, *Special latitat*, *Bill of Middlesex*, *Non omittas*, &c.

A *Capias*, is a Writ or Process, which is of two Sorts, who before Judgment, called *Capias ad respondendum*; granted in an Action personal, when the Sheriff upon the first Writ of Distress, returns *Nihil habet in ballivis nostro*.—The other is a Writ of Execution after Judgment, which is also of various Kinds; as *Capias ad satisfaciendum*, *Capias pro fine*, *Capias ut lagatum*, &c.

Capias ad satisfaciendum, is a Writ of Execution after Judgment, lying where a Man recovers in an Action personal, as for Debt, Damage, &c. in which Cases this Writ issues to the Sheriff, commanding him to take the Body of him against whom the Debt is recovered, who is to be kept in Prison till he makes Satisfaction; and if not in a Condition to do it, and lies at the Mercy

of an implacable and barbarous Plaintiff, as there are but too many of them in *England*, till he dies of Want and Misery.

Capias conductos ad proficiscendum, is an original Writ, which lies by the common Law against any Soldier who has covenanted to serve the King in War, and appear not at the Time and Place appointed. It is directed to two of the King's Serjeants at Arms, to arrest and take him wherever he may be found; and to bring him *coram concilio nostro*, with a Clause or Assistance.

A *Bill of Middlesex*, is a Writ which is to have a treble six-penny Stamp, and to be signed by the Keeper of the *Bill of Middlesex Office* in *New Inn*; for which the Fee is Six-pence in Term-Time, and Ten-pence in the Vacation; and on the Back of the Writ must be indorsed the Attorney's Name that sues it out, and the Day of the Month and Year when done; also a Note is to be made in Paper for the Office.

A *Latitat*, is a Writ whereby all Men in personal Actions are called originally to the *King's Bench*.—It has this Name, as supposing the Defendant lurks, lies hid, and cannot be found in the County of *Middlesex*, to be taken by Bill; but he is gone to some other County, to the Sheriff whereof this Writ is directed.

Habeas Corpus, is a Writ, which a Man indicted and imprisoned for any Crime, or Trespass, before the Justices of the Peace, or in a Court of Franchise; having offered sufficient Bail, which is refused, tho' the Cause beailable, may have out of the *King's Bench*, thereby to remove himself thither, on his own Costs, to answer the Cause at the Bar thereof.

The Order in this Case is, first to procure a *Certiorari* out of *Chancery*, directed to the said Justices, for removing the Indictment into the *King's Bench*; and upon that to procure this Writ to the Sheriff, for causing his Body to be brought at a certain Day.

Note, That I have mentioned several of these *Writs*, or *Process*, in different Places throughout this Treatise, I'll conclude it by taking Notice of the *Effoin-Days*, *Terms*, and *Returns of Writs*.

Terms, are the several Times or Seasons of the Year, wherein the Tribunals, or Courts of Judicature are open to all who think fit to complain of Wrong, or to seek their own by due Course of Law, or Action.

In Contra-distinction to these, the rest of the Year is called Vacation.

Of these Terms there are four in every Year; during which Time, Matters of Justice are dispatched, *viz.*

Hilary Term, which, at *London*, begins the 23d Day of *January*; or if it be on *Sunday*, the next Day after, and ends the 12th of *February* following.

Easter Term, which begins the *Wednesday* Fortnight after *Easter*, and ends the *Monday* next after *Ascension* Day.

Trinity Term, beginning the *Friday* next after *Trinity Sunday*, and ending the *Wednesday* Fortnight after.

Michaelmas Term, which begins the 23d of *October*, and ends the 28th of *November* following.

Each of these *Terms* have also their *Returns*.

Note, That *Returns*, *Return-Days*, or Days in Bank, are certain Days in each Term, particularly set apart for the several Kinds of Proceedings, in any Cause to be determined.

Hilary Term has four *Returns*; *viz.* *Ostabis Hillarii*, eight Days after *Hilary Day*; *Quindena Hillarii*, fifteen Days; *Crastina Purificationis*, the Day after the Purification; And *Ostabis Purificationis*, eight Days after, inclusive.

Easter Term has five *Returns*; *viz.* *Quindena Pasche*, fifteen Days after *Easter*; *Tres Pasche*, three Weeks after; *Mense Pasche*, the Day-Month after *Easter*; *Quinque Pasche*, the Day five Weeks from *Easter*; And *Crastina Ascensionis Domini*, the Day after *Ascension* Day.

Trinity Term has four *Returns*; *viz.* *Crastino Trinitatis*, the next Day after *Trinity*; *Ostabis Trinitatis*, eight Days after, inclusive; *Quindena Trinitatis*, fifteen Days after; And *tres Trinitatis*, three Weeks after.

Michaelmas Term, has six *Returns*; *viz.* *Tres Michaelis*, three Weeks after *Michaelmas*; *Mense Michaelis*, the Day-Month after *Michaelmas*; *Crastino Animarum*,

the Day after *All-Souls*; *Crastino Martini*, eight Days after, inclusive; And *Quindena Martini*, fifteen Days.

The first *Effoin Day* (which is the fourth Day inclusive before what is commonly called the first Day) is accounted the first of every Term; and on that Day one of the Judges always sits to take *Effoins*, &c. and the four Days in Term are first, the Day of *Effoin*; second, of *Exceptions*; third, *Return* of Writs; fourth, the Day of *Appearance*, called the *quarto die post*, (or fourth Day after) whereon the Court sits.

Note, That *Effoin*, or *Essoign*, is an Excuse for him, who being summoned to appear and answer to an Action real, or to perform Suit to a Court Baron, &c. cannot attend by Reason of some legitimate Hindrance. The Causes which serve to *effoin*, are divers; yet may be reduced to five Heads: The first is *Effoin de ultra mare*, when the Party is beyond Sea: The second is *De terra sancta*, when on an Expedition in the *Holy Land*: The third, *De malo veniendi*, when he is infirm of Body and cannot come; which is also called the common *Effoin*: The fourth, *Effoin de malo lecti*, when the Defendant is sick a-bed: The fifth *De servitio Regis*, when he is in the King's Service. Horn mentions several other *Effoins* touching the Service of the King celestial, &c.

Every Term begins on the fourth Day after the first Return thereof, and ends the *quarto die post*, of the last Return; unless either of them fall on a *Sunday*, in which Case the Term begins or ends on the *Monday* after; except only *Trinity Term*, the *Effoin Day* of the first Return whereof, being on a *Monday*, the fourth Day regularly is the *Thursday* following; but that being *Corpus Christi Day*, and no juridical Day, the *quarto die* is held on the *Friday*. Although the *Effoin Day* falls on a *Sunday*, yet the fourth Day after is computed from that Day, as from any other, and is to be the *Wednesday* following; and when the *Effoin Day*, *Return*, *Brevium*, or *Exception* Days, happen on a *Sunday*, the same are to be kept on the *Monday* next following; and in such Case the *Exception* and *Return* Days are included in one, *viz.* the *Tuesday*.

In the several Terms, the first *Effoin Day* of *Michaelmas Term*, is always on the 20th of *October*. Of *Hilary Term*, on the 20th of *January*. Of *Easter Term*, on the *Sunday-Fortnight* after *Easter*. And of *Trinity Term*, on the *Monday* or *Morrow* of *Trinity Sunday*. And in each Return throughout the respective Terms, are the several Days before mention'd, *viz.* the *Effoin Day* (being the Day mentioned in Writs) the *Exception Day*, the *Return Day*, and the Day of *Appearance*, which is the last of the *Return*, &c.

It is observable, that on whatever Day of the Week any Term begins, it is a good Day to make all *Process*es by Bill returnable upon *prox post*, every other Return of such Term, except the last Return: But *St. John Baptist's Day*, when it falls in *Trinity Term*, and all *Non juridical Days*, must be avoided, because they are no Days in Court, *viz.* every *Sunday* in any Term; the Feast of *All Saints* and *All Souls*, in *Michaelmas Term*; the *Purification*, in *Hilary*; and the *Ascension*, in *Easter Term*, &c. All *Process*es in the *King's Bench* upon Bill of *Middlesex*, *Latitat*, *Alias*, *Pluries*, &c. best before and after Judgment, must be returnable at Days certain, and may be so made upon any Day in Term (which is a *juridical Day*) next after any of the before mentioned returns.

The *Process* returnable in B. R. is returnable at a Day certain, naming the Day of the Week, &c. in this Manner: *Before us at Westminster, on Thursday next, after the Morrow of the Purification of the Blessed Mary, &c.* But if the *Process* be by Original, then 'tis *before us on the Morrow of the Purification, &c.* (not naming the Place or Day of the Week) *wheresoever we shall be in England*: And all Writs returnable wheresoever in this Court, are grounded upon Originals out of *Chancery*; or on Writs of Error out of the Common Pleas, and inferior Courts.

In C. B. the Writs being by Original, are not returnable on a Day certain; but only *before our Justices at Westminster, from the Day of St. Michael in three Weeks, &c.* Yet where the Action here is not by Original,

ginal, but some other Writ; as *Attachment of Privilege*, by Bill against privileg'd Person, *Prohibitions*, &c. such Writs all Proceſſes thereupon, are returnable, and have Continuance to Days certain: As *on Tuesday next after three Weeks of St. Michael*.

Note, That an *Attachment*, in the Senſe we take it here, is an Apprehenſion of a Man by his Body, to bring him to answer the Action of the Plaintiff. — *Lombard* makes this Difference between an *Arreſt* and an *Attachment*; that an *Arreſt* proceeds out of an inferior Court, by Precept only, and an *Attachment* out of a higher Court, either by Precept or Writ; and that a Precept to arreſt, has theſe formal Words, *Duci facias*, &c. and a Writ of *Attachment* theſe, *Præcipimus tibi quod attachies talem, & habeas eum coram nobis*. —

The Word is formed of the French *Attacher* to faſten, tye.

Original Writs, are thoſe ſent out of the high Court of Chancery, to ſummon the Defendant in a perſonal, or Tenant in a real Action, either before the Suit begins, or begin the Suit thereby.

In the fortunate Days of Man's primitive Innocency, this monſtrous Dedalus of Laws, of ſo many different Manners of Proceedings in the Courts of Juſtice, of ſo many different Terms, which even thoſe who have invented them, can ſcarcely underſtand, was entirely unknown, and nothing but the Depravity of our Manners, our Ambition, Avarice, &c. were capable to bring forth theſe hideous Offſprings, hatched up for the Devaſtation of Man's Fortune, and to rob him of his Liberty.

L O G I C.

LOGIC, is the Art of guiding well one's Reaſon in the Knowledge of Things, as well for one's Inſtruction, as for that of others.

This Art conſiſts in the Reflections Men have made on the four principal Operations of the Mind, viz. *Perception*, *Judgment*, *Ratiocination*, and *Method*.

We call *Perception*, or *Apprehenſion*, the ſimple View we have of Things which offer themſelves to our Mind, or whereby we only conceive a Thing, without Affirmation or Negation; as when we conceive the Sun, the Earth, a Tree, a Round or Square, the Thought, a Being, without forming any expreſs Judgment thereof.

We call Judgment the Act of our Mind, whereby the Ideas which agree together are joined by an Affirmation; and thoſe which diſagree are ſeparated by a Negation, or whereby one is affirmed, or denied of the other; as when I have the Idea of God, the Idea of Good, and the Idea of Lyar, I can join the Idea of Goodneſs with the Idea of God, and remove from him the Idea of a Lyar; in judging that Good is good, and that God is not a Lyar.

We call *Ratiocination* the Act of our Mind, whereby a Judgment is formed of ſeveral preceeding ones; as having judged that true Virtue muſt be referred to God, and that the Virtue of the Pagans was not referred to God, we conclude that the Virtue of the Pagans was not a true Virtue.

We call *Method* the Action of our Mind, whereby having on the ſame Subject, viz. the human Body, various Ideas, various Judgments, and various Reasonings, it diſpoſes them in the moſt proper Manner, to diſcover that Subject.

All this is done naturally, and ſometimes better by thoſe who have never learned any of the Rules of *Logic*, than by thoſe who have learned them.

Therefore this Art does not conſiſt in learning how to make theſe Operations, ſince Nature itſelf teaches it, in giving us our Reaſon; but how to reflect on our natural Actions, which ſerves us to three Things.

The firſt is, of being ſure that we make a good Uſe of our Reaſon, becauſe the Conſideration of the Rule engages us to make a new Attention to it.

The ſecond is, to diſcover with leſs Difficulty, the Errors or Imperfections which may be found in the Operations of our Mind, becauſe it often happens that one diſcovers by the natural Light alone, that a Reasoning is falſe, and one does not diſcover notwithstanding the Reaſon why it is falſe; as thoſe who do underſtand Painting, can be choked at ſome Imperfections in a Picture, though they cannot explain that Imperfection that offends them.

The third is, to give us a more perfect Knowledge of the Nature of our Mind, by the Reflections we make on its Actions; which is more excellent in itſelf, were we to conſider but the ſingle Speculation thereof, than the Knowledge of all corporal Things, which are infinitely beneath the ſpiritual.

If one but ourſelves had ever been concerned in the Reflections we make on our Thoughts, it had ſufficed

to conſider them in themſelves, without inveſting them with Words or any other Signs; but as we cannot communicate our Thoughts to one another, without accompanying them with external Signs; and that even this Habit is ſtrong; when we think by ourſelves, Things never offer themſelves to our Mind but with the ſame Words we cloath them when we ſpeak to others. It is neceſſary to conſider in the *Logic* the Things joined with Words, and the Words joined with the Things.

From all we have ſaid on this Subject, it follows that *Logic* can be very well divided into four Parts, according to the divers Reflections made on theſe four Operations of the Mind; therefore I'll divide it into four Parts. The firſt ſhall contain *the Reflections on Ideas*, or on *the firſt Act of the Mind called Conception*. The ſecond *the Reflections which Men have made on their Judgments*. The third, *Ratiocination*. The fourth, *Method*.

THE FIRST PART.

Of Ideas.

Note, That as we cannot have any Knowledge which are from us, but by means of the Ideas which are within us, the Reflections which can be made on our Ideas are perhaps the moſt important Subject in the *Logic*, becauſe it is the Foundation of all the reſt.

Thoſe Reflections can be reduced to five Chiefs or Heads, according to the five Manners of conſidering the Ideas. The *firſt*, according to their Nature and Origin. The *ſecond*, according to the principal Difference of the Objects they repreſent. The *third*, according to their Simplicity or Composition, where I'll treat of the Abſtractions and Preciſions of the Mind. The *fourth*, according to their Extent or Reſtriction, i. e. their Univerſality, Particularity, Singularity. The *fiſth*, according to their Clearneſs and Obſcurity, or their Diſtinction and Confuſion.

1. *Of Ideas according to their Nature and Origin*. The Word *Idea* is of the Number of thoſe which are ſo clear that they cannot be explained by others, becauſe there are none clearer and more ſimple.

But all that can be done to hinder one from being deceived with Regard to it, is to mark the falſe Signification which could be given to that Word, in conſining it to that ſingle Manner of conceiving Things, made by the Application of our Mind to the Images painted in our Brain, called Imagination. For as St. *Auguſtin* obſerves, Man, ever ſince *Adam's* Prevarication, has ſo accuſtomed himſelf to conſider none but corporal Things, the Images whereof enter through our Senſes into our Brain, that moſt of them believe they cannot conceive a Thing, which they cannot imagine, i. e. repreſent it to themſelves under a corporal Image, as if there was within us but that Manner of thinking and conceiving; whereas one can't reflect on what paſſes in our Mind, without diſcovering that we conceive a great Number of Things without any of thoſe Images; and without perceiving the Difference between Imagination and pure Intellection. For when, for Example, I imagine

agine to myself a Triangle, I not only consider it as a Figure terminated by three right Lines, but consider besides those three Lines, as presented by the Strength and inward Application of my Mind; and this is properly what is called Imagination, that if I want to think of a Figure of a thousand Angles, it is true that I conceive it a Figure composed of a thousand Sides, as easily as I conceive that a Triangle is a Figure composed of three Sides only; but I cannot imagine the thousand Sides of that Figure, nor, in some measure, consider them as present with the Eyes of my Mind.

It is true notwithstanding, that the Custom we have of making use of our Imagination, when we think of corporal Things, is often the Cause that in conceiving a Figure of a thousand Angles, we represent to ourselves confusedly some Figure; but it is evident that the Figure represented then by the Imagination, is not a Figure of a thousand Angles; since it differs in no Manner from what I should represent to myself, if I was to think of a Figure of ten thousand Angles, and is of no Service to discover the Properties which make no Difference of a Figure of a thousand Angles from all other Polygons.

Therefore I cannot imagine a Figure of a thousand Angles, since the Image I should paint of it in my Imagination, would represent to me all other Figures of a great Number of Angles, as soon as that of a thousand Angles; and notwithstanding, I can conceive it clearly and distinctly; since I can demonstrate all the Properties thereof, as that all its Angles together are equal to 1996 right Angles; and therefore there is a great Difference between Imagination and Conception.

This is still clearer by the Consideration of several Things we conceive clearly, though they be in no manner of the Number of those which can be imagined. For what can we conceive more clearly than our Thought when we think? And notwithstanding it is impossible to imagine our Thought, or to paint any Image thereof in our Brain: Neither can the *Yes* and the *No* have any in it. He that judges that the Earth is round, he that judgeth that it is not round, have both the same Thing painted in their Brain, *viz.* the Earth and Roundness, but one adds Affirmation to it, which is an Act of his Mind, which he conceives without any corporal Image; and the other a contrary Action, which is Negation, which is still less capable of an Image.

When then we speak of Idea, we do not call by that Name the Images painted in our Fantasy, but all that is in our Mind, when we can say truly that we conceive a Thing in whatever Manner we conceive it. Whence it follows, that we can express nothing by our Words, when we understand what we say, but that it is certain from that very Thing, that we have within us the Idea of the Thing signified by our Word, though that Idea be sometimes clearer and more distinct, and sometimes more obscure and confuse. For there would be a Contradiction in saying that I know what I say in pronouncing a Word, and that notwithstanding I conceive nothing else in pronouncing it but the Sound of the Word. And this shews the Falshood of two very dangerous Opinions, advanced by two very modern Philosophers.

The first is, *that we have no Idea of God*; for if we had none, in pronouncing the Name God, we should conceive nothing else of him but these three Letters, G, o, d, and an *Englishman* would have nothing more in his Mind, in hearing the Name of God pronounced, than if entering a Synagogue, and entirely ignorant of the *Hebrew*, he should hear pronounced in *Hebrew* *Adonai*, or *Elohab*. And when Men have assumed the Name of God, as *Caigula* and *Domitian*, they had committed no Impiety, since there is nothing in those Letters or two Syllables *Deus*, but what can be attributed to a Man, if no Idea was joined to it. Whence it follows that a *Dutchman* is not accused of Impiety for calling himself *Louis Dieu*, *Louis God*. In what then consisted the Impiety of those Princes, but that in leaving to that Word *Deus*, Part at least of its Idea, as is that of an excellent and adorable Nature, they appropriated to themselves that Name with that Idea.

But if we had no Idea of *God*, on what could be founded all that we say of him? As that there is but one that

he is eternal, omnipotent, infinitely good, infinitely wise; since nothing of all this is included in that Sound *God*, but only in the Idea we have of God, and which we have joined to that Sound. And it is for no other Reason we refuse the Name of God to the false Divinities of the Pagans; not because that Word cannot be attributed to them, if it was taken materially, since the Pagans have attributed it to them; but because the Idea which is within us of a supreme Being, and which Use has joined to that Word of God, belongs to the true God alone.

The second of these false Opinions is what Mr. *Locke* has said, *That Reasoning can be nothing else but an Assemblage and Concatenation of Words by this Word is; whence it should follow, that by Reason we conclude nothing at all with Regard to the Nature of Things, but only with Regard to their Appellations; that's to say, that we see, simply, if we assemble Right or Wrong the Names of Things, according to the Combinations we have been pleased to make with Regard to their Significations.* To which the same Author adds, *If that be, as it can be, the Reasoning shall depend of Words, the Words of our Imagination, and Imagination shall depend perhaps, as I believe, of the Motion of the corporeal Organs; and therefore our Soul will be nothing else but a Motion in some Parts of an organical Body.*

It is to be supposed, that this is only an Objection contrary to the Sentiment of the Author who proposes it; but as if it was taken in the Affirmative, it would tend towards destroying entirely the Immortality of the Soul, it is necessary to shew the Falshood thereof, which is not very difficult: For the Combinations this Philosopher speaks of, can be nothing else but an Agreement Men have enter'd into, to take Sounds for Signs of the Ideas we have in our Mind. So that if besides the Names, we had not within us the Ideas of Things, that Combination had been impossible; as it is impossible by any Combination whatever, to make one born blind understand the Signification of the Word red, green, blue, &c. because as he has not those Ideas, he cannot join them to any Sound.

Besides, the different Nations having given different Names, even to the clearest and most simple Things, as to those which are the Objects of Geometry, they could not have the same Reasonings with Regard to the same Truths, if Reasoning was nothing but an Assemblage of Words by the Word *Est*. And as it appears by those different Words, that the *Arabs*, for Example, have not agreed with the *French* in giving the same Significations to Sounds, neither could they agree in their Judgments and Reasonings, if their Reasonings depended on that Combination.

Lastly, there is a great Equivocation in that Word *Arbitrary*, when it is said that the Signification of the Words is *arbitrary*. For it is true, that it is a Thing arbitrary to join such an Idea to such a Sound, rather than to another; but *Ideas* are not Things arbitrary, and which depend of our Fancy, at least those which are clear and distinct. And to shew it evidently, is, that it would be ridiculous to imagine, that real Effects could depend of Things partly arbitrary. For when a Man has concluded by his Reasoning, that the Iron Axis which runs through two Mill-Stones, could turn, without making the under Stone turn, if being round, it should run through a round Hole; but that it could not turn without making the upper Stone turn likewise, if being square it was fastened in a square Hole of that upper Stone, an Effect which he pretended follows infallibly; and therefore his Reasoning has not been an Assemblage of Names, according to a Combination, depending entirely of Man's Fancy, but a solid and effectual Judgment of the Nature of Things, by the Consideration of the Ideas he has in his Mind of those Things; which Men have been pleased to mark by certain Names. Therefore we see well enough what we understand by the Word *Idea*; at present I must speak of their *Origin*.

The Origin of Ideas has been a long Time disputed among Philosophers: The *Peripateticks* maintain, that external Objects emit Species which resemble them all around; and that these Species striking on our Senses, are by them transmitted to our Understanding; that being

being material and sensible, they are rendered intelligible by the active Intellect; and are at length received by the passive.

Others are of Opinion, that our Souls have of themselves the Power of producing Ideas of Things we would think upon; and that they are excited to produce them by Impressions which Objects make on the Body; though these Impressions are not Images in any Respect like the Objects that occasioned them. And in this it is that Man is made after the Image of God, and that he partakes of his Power; for as God made all Things out of nothing, and can reduce them to nothing when he pleases, so Man can create as many Ideas as he pleases, and annihilate them when he has done.

Mallebranche and his Partisans assert, that God has in himself the Ideas of all the Beings he has created; that thus he sees all Things, in considering his own Perfections to which they correspond; and that as he is intimately united to our Soul by his Presence, our Mind sees and perceives Things in him, which represent created Beings; and that it is thus we come by all our *Ideas*: He adds, that though we see all sensible and material Things in God, yet that we have not our Sensations in him. When we perceive any sensible Object, in our Perception is included both a Sensation and a pure *Idea*. The Sensation is a Modification of the Soul, and it is God who causes it in us; but for the *Idea* joined with the Sensation it is in God.

The *Cartesians* distinguish three Kinds of *Ideas*: The first *innate*; such is that we have of God as of a Being infinitely perfect. The second *adventitious*; which the Mind receives in Proportion as bodily Objects present themselves to our Senses; such is the *Idea* of Body, Sound, Figure, Light, &c. The third are *fictitious*; which are those which the Mind forms, by uniting and assembling the *Ideas* which it already had, and these are called *complex*.

Mr. *Locke* is of Opinion, that all our *Ideas* are owing to our Senses; and that all innate, created, and fictitious *Ideas*, are mere Chimera's. Our Mind, he shews, has not absolutely any *Ideas* besides those presented to it by the Senses, and those which it forms by its own Operations, on those others which the Senses furnish: So that a Man destitute of one of his Senses would never have any *Idea* belonging to that Sense; and supposing him destitute of all the Senses, he would never have any *Idea* at all; external Objects having no other Way of producing *Ideas* in him, but by Means of Sensation; he would have no *Idea*, not even of Reflection, because in wanting all Sensation, he wants that which should excite in him the Operation of his Mind, which is the Object of his Reflection.

Therefore, that Authors pretend, that is, is plain, that there is no *innate Idea*; no general Truth, or first Principle inherent in the Soul, and created with it; no immediate Object of the Mind before it had perceived external Objects by Means of the Senses, and reflected on that Perception. Those *Ideas* only seem to be *innate*, because we find we have them as soon as we come to the Use of Reason; but are, in Effect, what we formed from the *Ideas* wherewith the Mind was insensibly fill'd by the Senses. Thus when the Mind is employ'd about sensible Objects, it comes by the *Ideas* of bitter, sweet, yellow, hard, &c. which we call *Sensation*; and when employed about its own Operations, perceiving and reflecting on them as employed about the *Ideas* before got by Sensation, we get the *Ideas* of Perception, Thinking, Doubting, Willing, &c. which we called *inward Sensation*, or *Reflection*; and these two, *viz.* external material Things as the Objects of Sensation, and the Operations of our own Mind as the Objects of Reflection, are the only Originals, whence all our *Ideas* have their Rise. That when we have considered these, and their several Modes and Combinations, we shall find they contain our whole Stock of *Ideas*; insomuch, that the Understanding does not seem to have the least Glimmering of any *Ideas*, that it did not receive from one of those Sources.

And thus far the Mind appears merely passive, as not having it in its Power to chuse whether it will have these first Beginnings or Materials of Knowledge, or not: For the Objects of Sense will obtrude their *Ideas* upon the Mind, and the Operations of the Mind will not

let us be without some (however obscure) Notion of them.

Though this Sentiment of Mr. *Locke* be common with several other modern Philosophers, I dare say that it is very absurd, and equally contrary to Religion, and to true Philosophy: For to say nothing but what's clear, we conceive nothing more distinctly than our own Thought, and there is no Proposition clearer than this; *I think, then I exist*; but we could not have any Certitude of this Proposition, if we did not conceive distinctly what it is *to be*, and what it is *to think*, and we are not to be asked to explain those Terms, since they are of the Number of those which are so well understood by every Body, that it would be rendering them obscure, to attempt to explain them. Therefore if it be undeniable that we have within us the *Ideas* of *Being* and of *Thinking*, I ask through what Sense they have entered? Are they luminous or coloured, to have entered through the Sight? Of a grave or acute Sound, to have entered through the Hearing? Of a good or bad Smell, to have entered through the Odorat? Of a good or bad Taste, to enter through the Taste? Cold or hot, hard or soft, to have entered through Feeling? If it be said that they have been formed of other sensible Images, we should be told likewise which are those other sensible Images, whereof it is pretended that the *Ideas* of *Being* and *Thinking* have been formed, and how they have been formed of those other sensible Images, if by Composition or Ampliation, or Diminution, or Proportion; if nothing reasonable can be answered to all this, it must be concluded, that the *Ideas* of *Being* and *Thinking* draw, by no Means, their Origin from the Senses; but that our Soul has of itself the Faculty to form them, though it happens often that it is excited to do it by something that strikes the Senses: As a Painter can be excited to paint a Picture, by the Money promised to him, though it cannot be said that the Picture draws its Origin from the Money.

Therefore it is false that our *Ideas* proceed from our Senses, but it cannot be said on the contrary, that none of the *Ideas* which are in our Mind, draws its Origin from the Senses, unless occasionally, in that the Motions made in our Mind, which is all our Senses can do, gives Occasion to the Soul to form several *Ideas*, which it would not form without, though almost always those *Ideas* have nothing sembable to what passes in the Senses and Brain, and there is besides a very great Number of *Ideas*, which borrowing nothing from a corporal Image, cannot without a visible Absurdity be reported to our Senses.

2. As to *Ideas considered according to their Objects*. All that we conceive is represented to our Mind, either as a Thing, or as the Manner of a Thing, or as a Thing modified.

I call *Thing*, what is conceived as subsisting by itself, and as the Subject of all that's conceived in it: It is what is otherwise called Substance.

I call *Manner of Things*, or *Mode*, or *Attribute*, or *Quality*, what being conceived in the Thing, and as being not capable to subsist without it, determines it to be of a certain Manner, and makes it to be called such.

I call a *Thing modified*, when the Substance is considered as determined by a certain Mode. This will be better understood by the following Examples.

When I consider a Body, the *Idea* I have formed of it, represents to me a Thing or a Substance, because I consider it as a Thing which subsists by itself, and wants no other Subject to exist. But when I consider that this Body is round, the *Idea* I have of the Roundness represents to me but a Manner of Being or a *Mode*, which I conceive cannot subsist naturally without the Body, whose Roundness it is. And lastly, when joining the *Mode* with the Thing, I consider it a round Body, that *Idea* represents to me a Thing modified.

The Names which serve to express the Things, are called substantive and absolute, as *Earth, Sun, Mind, God*. Those likewise which first and directly signify the *Modes*, because in that they have some Report with the Substances, are likewise called substantive and absolute, as *Hardness, Heat, Justice, Prudence*.

The Names which signify the Things as modified, marking first and directly the Thing, though more completely; and indirectly the *Mode*, though more distinctly.

ly, are called Adjective or Connotative, as *round, hard, just, prudent*.

But it must be observed, that our Mind being accustomed to know most of the Things as modified, because it seldom knows them but by the Accidents or Qualities which strike our Senses, it often divides the very Substance in its Essence, into two *Ideas*, one whereof it considers as Subject, and the other as Mode. Therefore though what is in God be God himself, he is notwithstanding, conceived as an infinite Being, and the Infinity considered as an Attribute of God, and the Being as the Subject of that Attribute. Thus Man is often considered as the Subject of the Humanity, *habens humanitatem*, and consequently as a Thing modified. And then the essential Attribute, which is the Thing itself, is taken for the Mode, because conceived as in a Subject. It is properly what we call Abstract of Substances, as *Humanity, Corporeity, Reason*.

It is notwithstanding necessary to know what is truly a *Mode*, and what is a *Mode* in Appearance only; because one of the principal Causes of our Errors, is to confound the *Modes* with the Substances, and the Substances with the Modes. Therefore it is of the Nature of a true Mode, that the Substance whereof it is the Mode, can be clearly and distinctly conceived without it; and that notwithstanding that Mode cannot be conceived, without conceiving at the same Time the Report it has to the Substance, and without which it cannot naturally exist. Not that a Mode cannot be conceived without having a distinct and express Attention to its Subject; but what shews that the Report to the Substance is included in the Mode, at least confusedly, is that that Report of the Mode cannot be denied without destroying the Idea one had of it: Whereas when we conceive two Things and two Substances, we cannot deny one of the other, without destroying the Ideas we had of each.

For Example, I can very well deny Prudence, without having a distinct Attention to a prudent Man, but I cannot conceive Prudence, in denying the Report it has to a Man, or other intelligent Nature who has that Virtue.

On the contrary, when I have considered all that belongs to an extended Substance, called Body, as the Extension, Figure, Mobility, Divisibility; and that on another Part I consider all this is agreeable to the Mind, and to a thinking Substance, as Thinking, Doubting, Remembling, Willing, Reasoning; I can deny of the extended Substance all that I conceive of the thinking Substance, without ceasing to conceive very distinctly the extended Substance, and all the other Attributes joined to it; and I can reciprocally deny of the thinking Substance, all that I have conceived of the extended Substance, without ceasing to conceive very distinctly all that I conceive in the thinking Substance. This shews that the Thought is not a Mode of the extended Substance, because the Extent, and all the Properties which follow it, can be denied of the Thought, without ceasing from conceiving well the Thought.

It may be observed on the Subject of the *Modes*, that there are some which may be called interior, because they are conceived in the Substance as *round, square, &c.* and others exterior, because taken from something which is not in the Substance, as *loved, seen, desired*, which are Names taken from the Actions of others; and it is what is called in the Schools *external Denominations*. That if those Words are drawn in whatever Manner Things are taken, they are called second Intentions; therefore to be Subject, to be Attribute, are second Intentions, because they are Manners under which are conceived the Things taken from the Action of the Mind, which has joined together two Ideas, in affirming one of the other.

It may be observed, besides, that there are *Modes* which may be called substantial, because they represent to us true Substances applied to other Substances, as *Modes* and Manners; *Clothed, Armed*, are Modes of that Kind.

There are others which may be called simply real; and these are the true *Modes* which are not Substances, but Manner of the Substance.

Lastly, there are some which may be called Nega-

tive, because they represent the Substance with some Negative of some Mode, real or substantial.

If the Objects represented by those Ideas, whether of Substances or of Modes, are in Fact such as they are represented to us, they are called true; but if they are not such, they are false in the Manner they can be false; and it is what we call in the Schools, *Entia rationis*, which consist commonly in the Assemblage the Mind makes of two Ideas real in themselves, but which are not joined in Truth, to form of them one same Idea; as that which can be formed of a golden Mountain, is an *Ens rationis*, because formed of the two Ideas of a Mountain and of Gold, which they represent as united, though they be not truly so.

To this Consideration of the *Ideas*, according to their Objects, may be referred the ten *Categories* of *Aristotle*; since they are but diverse Classes to which that Philosopher wanted to reduce all the Objects of our Thoughts, by including all the *Substances* under the first, and all the *Accidents* under the nine others. These ten *Categories* are as follow:

I. The SUBSTANCE, which is either spiritual or corporeal, &c.

II. The QUANTITY, called *discrete*, when the Parts thereof are not joined, as Number; — *continued*, when they are joined; and then it is either successive, as Time and Motion; — or *permanent*, which is what is otherwise called Space, or the Extent in Length, Width and Depth; the Length alone making the Lines, the Length and Breadth the Surfaces, and all three together the Solids.

III. The QUALITY, of which *Aristotle* makes four Kinds: The first, contains the *Habits*, i. e. the Dispositions of the Mind or of the Body, acquired by repeated Acts, as *Sciences, Virtues, Vices, Dexterity in Painting, Writing, Dancing, &c.* The second, the *natural Powers*; such as the Faculties of the Soul and of the Body, as *Understanding, Will, Memory, the five Senses, the Power of Walking*. The third, the *sensible Qualities*; as *Hardness, Softness, Weight, Cold, Heat, Colours, Sounds, Smells, and the various Tastes*. The fourth, the *Form* and the *Figure*, which is the external Determination of the Quantity; as to be *round, square, spherical, cubick*.

IV. The RELATION, or Report of one Thing to another; as of *Father, Son, Master, Servant, King, Subject*; of the Power to its Object, of the Sight to what is visible; and all that marks Comparison; as *semblable, equal, greater, smaller*.

V. ACTION, either in itself, as *to dance, to walk, to know, to love*; or without itself, as *to beat, to cut, to break, to light, to heat*.

VI. PASSION, as *to be beaten, to be broken, to be lighted, to be heated*.

VII. WHERE, i. e. what is answered to the Questions which regard the Place; as to be at *London, Paris, in one's Closet, in one's Bed, in one's Chair*.

VIII. WHEN, i. e. what is answered to Questions which regard the Time; as, When did he live? A hundred Years ago: When was that done? Last Monday.

IX. The SITUATION, *to be sitting, standing, lying, before, behind, on the right, on the left*.

X. To HAVE, i. e. to have something for Vestiment, Ornament, Armour; as to be *cloathed, crowned, armed*.

These are the ten *Categories* of *Aristotle*, which are represented as so many Mysteries; though, to say Truth, it be a Thing of a very little Utility, and which not only serves but very little towards forming the Judgment, which is the End proposed by the true *Logic*, but which often proves very prejudicial to it, for two Reasons it is necessary to observe.

The first is, that the *Categories* are considered as a Thing founded on Reason and Truth, when as it is a Thing entirely arbitrary, and which has no other Foundation but the Imagination of a Man, which had no Authority to prescribe a Law to others, who have as much Right as he had to order in another Manner the Objects of their Thoughts, each according to his own Manner of Philosophising. And in Effect, some have included in the following Distich, all that is considered by a modern Philosophy, in all the Things of this World,

World, and which are called the modern *Categories*, viz.

*Mens, mensura, quies, motus, positura, figura,
Sunt cum materiæ cunctarum exordia rerum.*

That's to say, that those modern Philosophers persuade themselves, that one can account for the whole Nature, in considering in it only these seven Things or *Modes*.

1. *Mens*, the *Mind* or thinking Substance.—2. *Materia*, the *Body*, or extended Substance.—3. *Mensura*, the *Measure*, or the *Bigness* or *Smallness* of each Part of the Matter.—4. *Positura*, the *Situation* with Respect to one another.—5. *Figura*, their *Figure*.—6. *Motus* their *Motion*.—7. *Quies*, their *Repose*, or less Motion.

The second Reason which renders the Study of the *Categories* dangerous, is, that it accustoms Men to content themselves with Words, and to imagine that they know all Things, when they know nothing but certain arbitrary Words, which form in the Mind no clear and distinct Ideas of the Things.

A modern Author has very judiciously observed, that the Rules of the *Logic* of *Aristotle*, served only to prove to another what he knew already, but that the Art of *Lullus*, whose Attributes are the most ridiculous Things which could ever be imagined, served only to make one discourse without Judgment of Things which he knows nothing of. Ignorance is far preferable to that false Science, which makes one mistake his Ignorance for a profound Knowledge.

As to the *Ideas of Things*, and *Ideas of Signs*.—When an Object is considered in itself and in its proper Being, without carrying the Sight of the Mind to what it can represent, the Idea one has of it is an Idea of a Thing, as the Idea of the Earth, of the Sun. But when a certain Object is considered but as representing another, the Idea one has of it, is an *Idea of Sign*, and that first Object is called *Sign*, thus Maps and Pictures are considered. Therefore the *Sign* includes two Ideas, one the Things representing, and the other of the Thing represented; and its Nature consists in exciting the second by the first.

Several Divisions of *Signs* can be made, but we'll content ourselves with three of the most useful.

First there are *Signs* which are *certain*, called in *Greek* *τεκμηρια*, as Respiration is a *Sign* of the animal Life: And there are *Signs* which are only *probable*, called in *Greek* *σημεια*, as Paleness is but a *probable Sign* that a Woman is with Child.

Most of the temerary Judgments, proceed from that one to confound those two Sorts of *Signs*; and that one Effect is attributed to a certain Cause, though it can proceed from other Causes, and therefore is but a probable *Sign* of that Cause.

Secondly, there are *Signs* joined with the Things, as the Air of the Face, which is a *Sign* of the Motions of the Soul, is joined with those Motions which it signifies; the Symptoms, *Signs* of Maladies, are joined to those Maladies; and to make use of more noble Examples, the colomb Figure of the Holy Ghost is joined with the Holy Ghost, and the Ablution in Baptism, Figure of a spiritual Regeneration, is joined to that Regeneration.

There are also *Signs* separated from the Things, as the Sacrifices of the old Law, *Signs* of *Jesus Christ* sacrificed, were separated from what they represented.

This Division of *Signs* gives Room to establish the following Examples.

1. That one can never conclude precisely, neither from the Presence of the *Sign* to the Thing signified thereby, since there are *Signs* of Things absent; nor from the Presence of the *Sign*, to the Absence of the Thing signified, since there are *Signs* of Things present; 'tis therefore the particular Nature of the *Sign* which must direct our Judgment.

2. That though a Thing in one State cannot be the *Sign* of itself in that same State, since all *Sign* wants a Distinction between the Thing representing and the Thing represented; it is notwithstanding very possible that a Thing in a certain State represents itself in another State, as it is very possible that a Man in his Chamber represents himself preaching; and therefore the sole Distinction of State suffices between the Thing figuring and the Thing figured; that's to say, that the same

Thing can be in a certain State, the Thing figuring, and in the other the Thing figured.

3. That it is very possible that the same Thing hides and discovers another Thing at the same Time; and therefore those who have said *that nothing appears by what hides it*, have advanced a Maxim which has very little Solidity; for as the same Thing can be at the same Time and the Thing and the *Sign*, it can hide as a Thing, what it discovers, as a *Sign*; thus hot Ashes, as a Thing, hide Fire, and, as a *Sign*, discover it: Thus the Forms borrowed by Angels covered them as *Things*, and discovered them as *Signs*.

4. It may be concluded, that it being the Nature of the *Sign* to excite in the Senses by the Idea of the Thing figuring, that of the Thing figured, as long as that Effect subsists, *i. e.* as long as that double Idea is excited the *Sign* subsists, was even that Thing destroyed in its proper Nature; thus it is no Matter whether the Colours of the Rainbow, which God has taken for *Signs* that he would destroy no more the human Race by a Deluge, be real and true, provided our Senses have always the same Impression, and they make use of that Impression to conceive God's Promise.

The third Division of *Signs*, is, that there are natural ones, which in no Manner depend on Man's Fancy, as an Image, which appears in a Glass as a *natural Sign* of him it represents; and others which are of *Institution* only, whether they have a distant Report within the Thing figured, or none at all. Thus Words are *Signs of Institution* of the Thoughts, and Characters of the Words. I'll explain in treating of the Propositions, an important Truth on this Sort of *Signs*, which is that, on some Occasions, the Things signified can be affirmed of them.

As to *Ideas considered according to their Composition or Simplicity*.—What we have already observed, *en passant*, that we can consider a *Mode*, without Reflection on the Substance of which it is a *Mode*, gives us Occasion to explain what is Abstraction of the Mind.

The Narrowness of our Mind hinders us from conceiving perfectly Things which are a little composed, but in considering them by Parts, and by the different Faces they can receive, it is what can be generally called to *know by Abstraction*. But as Things are variously composed, and some of them are composed of Parts really distinct, called *integrant Parts*, as the human Body, and the divers Parts of a Number; it is very easy then to conceive, that our Mind can apply itself to the Consideration of a Part, without considering the other, because those Parts are really distinct, and it is not even what is called *Abstraction*.

Or it is so useful to consider in those very Things rather the Parts separately than the whole, that without it, it is almost impossible to have a distinct Knowledge. For Example, how can the human Body be known, without dividing it into its similar and dissimilar Parts, and giving them all different Names? The whole Arithmetick is also founded on this; for there is no Art wanted to reckon the small Numbers, because the Mind can conceive them whole, and therefore the whole Art consists in reckoning by Parts, which cannot be reckon'd by the whole, as it would be impossible how great soever could be the Extent of our Mind, to multiply two Numbers of 8 or 9 Carats each, in taking them whole.

The second Knowledge by Parts is, when one considers a *Mode* without the least Attention to the Substance, or two *Modes* joined together in one same Substance, in considering each of them a-part. It is what the Geometers do, who have taken for Object of their Science, the Body extended in Length, Breadth, and Depth. For to acquire a more perfect Knowledge thereof, they have first applied themselves to consider it according to one single Dimension, which is the Length, to which they have given the Name of *Line*. They have consider'd it afterwards according to two Dimensions, the Length and the Breadth, and have called it *Surface*. And then considering all the three Dimensions together, *viz.* the Length, Breadth, and Depth, they have called it *Solid* or *Body*.

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some Scepticks, who would have us question the Certainty of Geometry, because it supposes Lines and Surfaces which are not in Nature; for Geometers do not suppose, that there are Lines without Breadth, or Surfaces without Depth; but they suppose only that one may consider Length, without any Attention to Breadth, which is indubitable; as when one measures the Distance from one City to another, he measures but the Length of the Road, without any Regard to the Breadth.

Therefore the more we can separate Things into divers Modes, the more the Mind becomes capable to know them well. And thus we see, that as long as the Determination towards some Place, and even of divers Parts in the same Determination, has not been distinguished in the Motion, we have never been capable to account clearly for the Reflection, and Refraction; which is easily done by that Distinction.

The third Manner of conceiving Things by *Abstraction*, is, when the same Thing having various Attributes, we think of one without thinking of the other, though there be between them but a Distinction of Reason, and this is done thus. If I reflect, for Example, that I think, and that consequently I am the Person that think, I can apply myself to the Consideration of a thinking Thing, without any Attention that I am the Person that thinks, though in me, I, and the thinking Person is but the same Thing: And therefore the Idea I shall conceive of a Person who thinks, will represent not only myself, but likewise all the other Persons that think. Likewise having drawn on a Paper an equilateral Triangle, if I apply myself to consider it in the Place wherein it is, with all the Accidents whereby it is determined, I shall have the Idea but of a single Triangle; but if I withdraw my Mind from the Consideration of all those particular Circumstances, and apply it only to think that it is a Figure terminated by three equal Lines, the Idea I'll form of it to myself, shall on one Part represent more clearly that Equality of Lines, and on the other will be capable to represent to me all the equilateral Triangles: That if I proceed further, and without fixing myself to that Equality of Lines, I consider only that it is a Figure terminated by three right Lines, I form an Idea to myself which can represent all Sorts of Triangles. If afterwards, without any Regard to the Number of Lines, I consider only that it is a flat Surface, terminated by right Lines, the Idea I'll form of it will be capable to represent all the rectiline Figures; and thus I can ascend by degrees to Extension. In these *Abstractions* it is always seen, that the inferior Degree contains the superior, with some particular Determination; but that the superior Degree being less determined can represent more Things.

Lastly, it is clear that by those Sorts of *Abstractions*, the singular Ideas become common, and the Commons more common; which procures me the Occasion of speaking of Ideas considered according to their *Universality* or *Particularity*.

As to Ideas considered according to their *Generality*, *Particularity*, and *Singularity*.—Though all the Things which have an Existence be singular, notwithstanding, by means of the *Abstractions* above-mentioned, we have all several Ideas, some of which represent to us but one single Thing, as the Idea every one has of himself; and the others can equally represent several, as when any body conceives a Triangle, without considering any Thing else in it, but that it is a Figure with three Lines and three Angles, the Idea he has formed of it, can serve him to conceive all the other Triangles.

The Ideas which represent but one Thing, are called *singular* or *individual*, and what they represent *Individuals*; and those which represent several Things, are called *universal*, *common*, *general*.

The Names which serve to denote the first Kind of Ideas are called *proper*, as *Socrates*, *Rome*, *Bucephalus*, and those which serve to mark the last, *common* and *appellative*, as *Man*, *City*, *Horse*; and both the *universal* Ideas, and the *common* Names may be called *general* Terms.

But it must be observed that Words are *general* in two Manners; one called *univocal*, which is when they are joined with general Ideas; so that the same Word is

agreeable to several, as well according to the Sound, as according to the same Idea, such are the Words above-mentioned of *Man*, *City*, and *Horse*.

The other called *Equivocal*, which is when the same Sound is join'd by us to different Ideas; thus the Word *Canon* signifies a warlike Instrument, and *Canon* a Decree of a Council; though it signifies them but according to different Ideas.

This *Equivocal Universality*, is, notwithstanding, of two Kinds. For the different Ideas joined to the same Sound, either have no natural Report between themselves, as in the Word *Canon*, or have some Report, as when a Word being particularly joined to an Idea, is joined to another, but because it has a Report of Cause, or of Effect, or of Sign, or of Similitude to the first; and then those Sort of *Equivocal Words*, are called *Analogous*; as when the Word *wholesome* is attributed to an Animal, to the Air, and to Food; for the Idea join'd to that Word, is principally *Health*, which only is agreeable to Animals, but another Idea is joined to it; very little different from that, which is to be the Cause of *Health*, which makes us say the *Air is wholesome*, the *Meat is wholesome*, because they serve to preserve *Health*.

But when we speak here of *general Words*, we understand the *Equivocal* joined to universal and general Ideas: And in those universal Ideas, two Things are to be considered, *viz.* *Comprehension* and *Extension*.

I call *Comprehension of the Idea*, the Attributes contained in that Idea, and which cannot be taken from it, without destroying it entirely; as the *Comprehension* of the Idea of the Triangle, includes Extension, Figure, three Lines, three Angles, and the Equality of those three Angles, to two Rights, &c.

I call *Extension of the Idea*, the Subjects to which that Idea is agreeable, called also, Inferiors of a general Term, which to their Regard is called Superior, as the Idea of a Triangle in general, extends itself to all the different Sorts of Triangles.

But though the *general Idea* extends itself, without Distinction to all the Subjects agreeable to it, *i. e.* to all its Inferiors, and the common Name signifies them all, there is, notwithstanding, this Difference between the Attributes it contains, and the Subjects to which it extends itself, that none of its Attributes can be taken from it without destroying it, as we have already observed, when as it can be confined, as to its Extension, by applying it only to some of the Subjects to which it is agreeable, without any Detriment happening to it.

This *Restriction* of the general Idea, as to its Extension, can be made in two Manners.—The first is by another distinct and determinate Idea joined to it; as when to the general Idea of the Triangle I join that of its having a right Angle, which confines that Idea to a single Kind of Triangle, which is the Triangle rectangle. The other in joining to it only an indistinct and indeterminate Idea, as when I say, some Triangle; and it is said then, that the common Term becomes particular, because it extends no farther than to a Part of the Subjects, it extended before; without having determined, notwithstanding, which is the Part to which it is confined.

As to the five Kinds of universal Ideas, *Generals*, *Species*, *Differences*, *Probers*, and *Accidents*. What I have said already of Ideas, helps me towards explaining, in few Words, the *five Universals*, commonly treated in the Schools.

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Porphy-

World, and which are called the modern *Categories*, viz.

*Mens, mensura, quies, motus, positura, figura,
Sunt cum materiâ cunctarum exordia rerum.*

That's to say, that those modern Philosophers persuade themselves, that one can account for the whole Nature, in considering in it only these seven Things or *Modes*.

1. *Mens*, the *Mind* or thinking Substance.—2. *Materia*, the *Body*, or extended Substance.—3. *Mensura*, the *Measure*, or the *Bigness* or *Smallness* of each Part of the Matter.—4. *Positura*, the *Situation* with Respect to one another.—5. *Figura*, their *Figure*.—6. *Motus* their *Motion*.—7. *Quies*, their *Repose*, or less Motion.

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But though the *general Idea* extends itself, without Distinction to all the Subjects agreeable to it, *i. e.* to all its Inferiors, and the common Name signifies them all, there is, notwithstanding, this Difference between the Attributes it contains, and the Subjects to which it extends itself, that none of its Attributes can be taken from it without destroying it, as we have already observed, when as it can be confined, as to its Extension, by applying it only to some of the Subjects to which it is agreeable, without any Detriment happening to it.

This *Restriction* of the general Idea, as to its Extension, can be made in two Manners.—The first is by another distinct and determinate Idea joined to it; as when to the general Idea of the Triangle I join that of its having a right Angle, which confines that Idea to a single Kind of Triangle, which is the Triangle rectangle. The other in joining to it only an indistinct and indeterminate Idea, as when I say, some Triangle; and it is said then, that the common Term becomes particular, because it extends no farther than to a Part of the Subjects, it extended before; without having determined, notwithstanding, which is the Part to which it is confined.

As to the five Kinds of universal Ideas, *Genders*, *Species*, *Differences*, *Probers*, and *Accidents*. What I have said already of Ideas, helps me towards explaining, in few Words, the *five Universals*, commonly treated in the Schools.

Note, That the Invention of these *five Universals*, is attributed to *Porphyrius*, by Birth a Jew, born at Tyre, and an Apostate of the Christian Religion, by Profession a Philosopher, of the Sect of the *Platonicians*, *Photinus's* Disciple, Con-Disciple of *Origen*, and Preceptor of *Iamblicus*. He wrote his *Isagoge*, which contain the *five Universals*, for the Instruction of a Roman Youth, called *Chrysaorgius*, and a Pagan, about *Dioclesian's* Time. However he is to be esteemed for having freed the *Logic*, of the vain and useless Questions of the ancient Sophists, *viz.* *Whether the Genders and Species consist in the Nature of Things, or if they be placed only in the mere Imagination.*

Porphy-

Porphyrius answering the first Part of that Question in the Affirmative, and the last in the Negative: But to proceed:

When the *general Ideas* represent to us the Objects as Things, and they are denoted by Terms, called Substantive, or absolute, they are called *Genders*, or *Species*.

They are called *GENDERS*, when they are so common, that they extend themselves to other *Ideas*, which are still *universal*, as *Animal* is a *Gender*, with Respect to Men and Beast; and the *Quadrilaterum*, with Respect to the Parallelogram and Trapezium: The Substance is a *Gender*, with Respect to the extended Substance, called Body, and to the thinking Substance, called Mind.

To explain the Essence or Nature of some Thing, not only that Part which it has in common with others is to be mention'd, but likewise, that particular Part whereby it differs from others. For Example, to explain Man's Nature, he must not only be called *Animal*, which he has in common with the Beasts, but *Rational* is to be added to it, whereby he differs from them. Thus a Triangle is not only a Figure, but a Figure contained in three Lines. And this particular Part, which together with the *Gender*, establishes the *Specie*, is called *Difference*, of which hereafter.

The common *Ideas*, which are under one more common and more general, are called *Species*, as the Parallelogram and Trapezium are *Species* of the *Quadrilaterum*; the Body and the Mind are *Species* of the *Substance*. And thus the same *Idea* may be *Gender*, when compared with the *Ideas* to which it extends; and *Species* when compared with another which is more general, as *Body*, which is a *Gender* with Respect to the animated and unanimated Body; and a *Species* with Regard to the Substance: And the *Quadrilaterum* which is a *Gender* with Respect to the Parallelogram and Trapezium, and a *Species* with Regard to the Figure.

But there is another Notion of the Word *Species*, which is appropriated only to the *Ideas*, which cannot be *Genders*; and is when an *Idea* has none but Individuals and Singulars, under itself, as the Circle has under itself but singular Circles, which are all of the same *Specie*. It is what we call *Species infima*. And there is a *Gender* which is not a *Species*, viz. the Supreme of all *Genders*, whether that *Gender* be the Being or the Substance, which is not very important to know.

I have said, that the *general Ideas*, which represent to us their Objects as Things, are called *Genders* or *Species*; for it is not necessary that the Objects of those *Ideas* be effectually in the Things and Substances; but it suffices, that we consider them as Things, in that when even they are Modes, they are not reported to their Substances, but to other less general, or more general *Ideas* of Modes, as the Figure which is but a Mode with Regard to the Body figurated, is a *Gender*, with Regard to the Curvi-line, Recti-line, &c. Figures.

On the contrary, the *Ideas* which represent to us their Objects as modified Things, or mark'd by adjective or connotative Terms, if they be compared with the Substances which those connotative Terms signify confusedly, though directly, whether, in Truth those connotative Terms signify the essential Attributes, which are in fact but the Thing itself, or signify true Modes, they are called then, neither *Genders* nor *Species*, but either *Differences*, *Propers*, or *Accidents*.

They are called *Differences*, when the Object of those *Ideas* is an essential Attribute, which distinguishes a *Specie* from another; as *extended*, *heavy*, *reasonable*.

They are called *Propers*, when their Object is an Attribute, which belongs in fact to the Essence of the Thing; but which is not the first considered in that Essence, but only a Dependency of that first, as *divisible*, *immortal*, *docile*. And,

They are called *Common Accidents*, when their Object is a true Mode which can be separated, at least by the Mind, from the Thing of which it is said an Accident; without the *Idea* of that Thing being destroyed in our Mind, as *round*, *hard*, *just*, *prudent*.—It is what I must explain in a more particular Manner.

As to the Difference.—When a *Gender* has two *Species*, the *Idea* of each *Species* must necessarily contain something which is not contained in the *Idea* of the *Gender*.

Otherwise, if each should contain only but what is contained in the *Gender*, it would be nothing else but the *Gender*; as the *Gender* is agreeable to each *Species*, each *Species* would be agreeable to the other. Therefore the first essential Attribute, which each *Species* contains more than the *Gender*, is called its *Difference*, and the *Idea* we have of it, is an universal *Idea*, because one and the same *Idea* can represent that *Difference* wherever it is found, *i. e.* in all the Inferiors of the *Species*. For Example, the Body and the Mind are two different *Species* of the Substance; there must be then something more in the *Idea* of the Body, than in that of the Substance, and the same in that of the Mind. But the first Thing we see more in the Body is the Extension, and the first Thing we see more in the Mind is the Thought; and thus the Extension will be the Difference of the Body, and the Thought the Difference of the Mind; that is to say, that the Body will be an extended Substance, and the Mind a thinking Substance.

Whence we can see, 1. That the *Difference* has two Respects, one to the *Gender* and the other to the *Species*, which it establishes and forms, making the principal Part of what is included in the *Idea* of the *Species*, according to its Comprehension. Whence it happens, that all *Species* can be expressed by one Name only, as *Mind*, *Body*, &c. or by two Words, viz. by that of the *Gender*, and by that of its *Difference* joined together, which is called *Definition*, as *thinking Substance*, *extended Substance*.

It can be seen in the second Place, that since the *Difference* constitutes the *Species*, and distinguishes it from other *Species*, it must have the same Extent of the *Species*, and therefore that they should be said reciprocally of one another, as *all that thinks is Mind*, and *all that's Mind thinks*.

It notwithstanding happens very often, that in some certain Things no such Attribute is seen, as to belong to a *Species* alone, and exclusive of all other *Species*; and then several Attributes are joined together, the Assemblage thereof being found only in that *Species*, constitutes its *Difference*. Thus the *Platonicians* taking the Devils for reasonable Animals, as well as Men, could not find that the *Difference* of reasonable was reciprocal to Man, since it belongs to Beasts likewise, but both together belong to Man alone; and it is what we do in the *Idea* we form to ourselves of most of the Animals.

Lastly, it must be observed, that it is not always necessary, that the two *Differences* which divide a *Gender*, be both positive; but one of them must be positive, as two Men are distinguished from one another, if one of them has an Employment which the other has not; though he who has no Employment has nothing but what the other hath. It is thus that Man is distinguished from Beasts in general, in that Man is an Animal which has a Mind, *Animal mente præditum*; and the Beast is a pure Animal, *Animal merum*; for the *Idea* of Beast in general, hath nothing positive, but what is in Man, but the Negation of what is in Man, viz. the Mind, is only added to it. So that all the *Difference* between the *Idea* of Animal and that of Beast, is, that the *Idea* of Animal includes not Thought in its Comprehension, neither doth it exclude it, but even includes it in its Extent, because it belongs to a thinking Animal; when as the *Idea* of Beast excludes it in its Comprehension, and therefore cannot belong to a thinking Animal.

As to Proper.—When we have found the *Difference* which constitutes a *Species*, viz. its principal essential Attribute whereby it is distinguished from all other *Species*, if considering more particularly its Nature, we find in it besides some Attribute necessarily joined with that first Attribute, and which consequently belongs to that whole *Specie*, and to that *Specie* alone, we call it *Property*; and being signified by a connotative Term, we attribute it to the *Species* as its Proper, and because it is also agreeable to all the Inferiors of the *Specie*, and that the single *Idea* we have once formed of it can represent that Property whenever it is found; there has been made of it the fourth of the common and universal Terms. For Example, to have a right Angle is the essential Difference of a Triangle Rectangle. And because it is a necessary Dependency of the right Angle, that the Square of the Side which supports it, be equal to the Squares of the two Sides which contain it, the Equality

Equality of those Squares is considered as the Property of the triangle Rectangle, which belong to all triangles Rectangle, and only belong to them.

Which notwithstanding, that Name *Proper*, has been sometimes extended further, and four *Species* have been made of it.

The first is that which I have already explained, *Quod convenit omni soli & semper*, as it is the *Proper* of a Circle, and of a Circle alone, and always, that the Lines drawn from the Center to the Circumference be equal.

The second, *Quod convenit omni, sed non soli*, as it is said that it is the *Proper* of the Extension to be divisible, because all extended Bodies can be divided, though Duration, Number, &c. can also be divided.

The third is, *Quod convenit soli, sed non omni*, as it belongs to Man to be a Physician or a Philosopher, tho' all Men are not such.

The fourth, *Quod convenit omni & soli, sed non semper*, as the Faculty of reasoning belongs to all Men, and to Men alone, and always.

As to Accident.—We have already observed that what could exist naturally no otherwise than by the Substance, and was not necessarily joined with the Idea of a Thing, was called *Mode*, so that the Thing may be very well conceived without conceiving the *Mode*, as one can very well conceive a Man without conceiving him prudent; but Prudence cannot be conceived without conceiving either a Man, or another intelligent Nature, which should be prudent.

Therefore when a confuse and indeterminate Idea of Substance is joined with a distinct Idea of some *Mode*, that Idea will be capable to represent all the Things where that *Mode* can be, as the Idea of *Prudence*, all prudent Men, the Idea of *round*, all round Bodies; and then that Idea expressed by a connotative Term, *prudent*, *round*, is what makes the *fifth Universal*, called *Accident*, because not essential to the Thing to which it is attributed; for if it was, it would be either *Difference* or *Proper*.

But it must be observed here, as I have said already, that when one considers two Substances together, one of them may be considered as the *Mode* of the other. Thus a Man clothed can be considered as a Whole composed of that Man and of his Cloaths; but to be clothed with Regard to that Man is only a *Mode*, or a Manner of Being, under which he is considered, though his Cloaths be Substances; Therefore to be clothed is but a *fifth Universal*.

This is more than sufficient with Regard to the *five Universals* treated so amply in the Schools. For it is of very little Use to know if there be *Genders*, *Species*, *Differences*, *Properties*, and *Accidents*; but the Importance is to know the true *Genders* of the Things, the true *Species* of each Gender, their true *Differences*, their true *Properties*, and the *Accidents* belonging to them, and it is what I'll elucidate in a still clearer Manner, after I have said something of the *complex Terms*.

As to complex Terms, and their Universality or Particularity.—Sometimes to a Term are joined several others which compose in our Mind a total Idea, of which it often happens one can affirm or deny, which could not be affirmed or denied of each of those Terms, if separated: For Example, these are Terms complex, a *prudent Man*, a *transparent Body*, *Alexander Son of Philip*.

This Addition is sometimes made by the relative Pronoun, as if I say, a *Body which is transparent*, *Alexander who is Son of Philip*, &c. And it can even be said that if that Relative is not always expressed, it is always in some Manner understood, because it can be expressed, if one will, without changing the Proposition. For it is the same Thing to say a transparent Body, and a Body which is transparent.

What is the most remarkable in these complex Terms, is, that the Addition made to a Term is of two Sorts; one which can be called *Explication*, and the other *Determination*.

That Addition may be called only *Explication*, when it only unfolds either what is included in the Comprehension of the Idea of the first Term, or at least what belongs to it as one of its *Accidents*; provided it is agreeable to it in general, and in all its Extent, as if I

say, *Man who is an Animal indued with Reason*, or *Man who desires naturally to be happy*, or *Man who is mortal*. These Additions are only *Explications*, because they do not at all change the Idea of the Word *Man*, nor confines it to signify nothing but one Part of Men, but marks only what is convenient to all Men.

All the Additions added to Names which mark distinctly an Individual, are of that Sort; as when one says, *George, one of the greatest Captains in the World*, *Frederick, the Titus of the Age*, *Harrington, a great Politician*; for the individual Terms distinctly expressed, are always taken in their whole Extent, being determined as much as they can be.

The other Sort of Addition, which can be called *Determination*, is when what has been added to a general Word, confines the Signification thereof; and does that it is no more taken for that general Word in its whole Extent; but only for a Part of that Extent, as if I say, the *transparent Bodies*, the *learned Men*, a *reasonable Animal*. Those Additions are not simple *Explications* but *Determinations*, because they confine the Extent of the first Term, in doing that the Term, *Body*, signifies no more but one Part of the Bodies, the Word *Man*, but one Part of Men, the Word *Animal*, but one Part of Animals. And these Additions are sometimes such that they render a general Word individual, when individual Conditions are added to it, as when I say *the present King of France*, that determines the general Word *King* to the singular Person of *Louis XV*.

As to the Clearness and Distinction of the Ideas, and to their Absurdity and Confusion. There can be distinguished in an Idea the *Clearness* from the *Distinction*, and *Obscurity* from *Confusion*. For an Idea can be said clear when it strikes us to the Quick, though it be not distinct as the Idea of Pain strikes us to the Quick, and accordingly can be called clear, though notwithstanding it is very confuse, since it represents the Pain to us in the wounded Hand, whereas it is only in our Mind.

Notwithstanding it can be said, that all *clear Ideas* are distinct, and that their *Obscurity* proceeds only from their *Confusion*, as in Pain, the sole Sensation which strikes us is clear, and distinct likewise, but what is confuse, which is, that that Sensation in our Hand is not clear to us.

Taking then for the same Thing the *Clearness* and *Distinction* of the Ideas, it is very important to examine, why some of them are clear, and the others obscure; which is better discovered by Example than by any other Means; and therefore I'll make an Enumeration here of the Principals of our Ideas which are *clear* and *distinct*, and of the Principal of those which are *confuse* and *obscure*.

The Idea which every one has of himself, as of a thinking Thing, is very *clear*; and likewise the Idea of all the Dependencies of our Thought, as *to judge*, *to reason*, *to doubt*, *to will*, *to desire*, *to feel*, *to imagine*.

We have likewise very *clear Ideas* of the extended Substances, and what is convenient to it, as *Figure*, *Motion*, *Repose*.

We conceive also very clearly the *Being*, *Existence*, *Duration*, *Order*, *Number*; provided we think only that the *Duration* of every Thing is a *Mode*; and likewise that the *Order* and the *Number* do not differ in fact from the Things ordered and numerated.

All these Ideas are so clear, that often when we want to elucidate them more, and not satisfied with those we form naturally, we darken them.

We can say also, that the Idea we have of God in this Life is *clear* in one Sense, though it be obscure in another, and very imperfect. It is *clear*, in that it suffices to let us know in God several Attributes which we are sure are found no where but in God alone; but it is obscure if compared with that the Blessed have of him; and it is imperfect in that our Mind being finite, cannot conceive but very imperfectly an infinite Object: But to be perfect and to be clear are different Conditions in an Idea. For it is *perfect* when it represents all that is in its Object; and it is *clear* when it represents enough of it, to be clearly and distinctly conceived.

Confuse and *obscure Ideas* are those we have of the sensible Qualities, as of the *Colours*, *Sounds*, *Smells*, *Tastes*, *Colds*, *Heats*, &c. as likewise of our Appetites, Hunger,

Hunger, Thirst, &c. and this is the Cause of the Confusion of those *Ideas*.

As we have been sooner Infants than Men, and the external Things have worked upon us, in causing various Sentiments in our Soul, by the Impressions they made on our Bodies, the Soul perceiving that it was not by the Will those Sentiments were excited within her, but were only occasioned by some Bodies, as that she felt Heat when she approached the Fire, was not contented to judge that there were some external Thing which caused those Sentiments; she is even gone further, believing that what was in those Objects was entirely sensible to the Sentiments or Ideas they had occasioned within her; and has formed Ideas of those Judgments in transporting those Sentiments of Heat, Colour, &c. into the external Things themselves. And these are the *confuse* and *obscure Ideas* we have of the sensible Qualities, the Soul having added her erroneous Judgments, to what Nature had discovered to her.

And as those *Ideas* are not natural but only arbitrary, they have acted towards them in a very extravagant Manner: For tho' *Heat* and *Burn* be but two Sentiments, one weaker and the other stronger, the Heat has been put in the Fire, and it has been said, that the Fire had Heat, but the *Burn* has not been put in it, or the Pain felt in approaching too near; for it is not said that the Fire has any Pain.

But if Men have seen that the Pain is not in the Fire which burns the Hand, perhaps they have deceived themselves, in believing that it is in the Hand which the Fire burns, whenas it taking it right, it is but in the Mind, though occasioned by what passes in the Hand; because the Pain of the Body is nothing else but a Sentiment of Aversion which the Soul conceives of some Motion contrary to the natural Constitution of his Body. In fact, what shews that the Pain called corporal is in the Soul and not in the Body, is that the same Things which cause us Pain, when we think of them, cause us none when our Mind is employed elsewhere.

The *Idea* of *Gravity* which appears so clear, is no less *obscure* than the others abovementioned; for Children seeing Stones and other like Things fall downwards, they have formed from thence the *Idea* of a Thing which falls; which *Idea* is natural and true, and likewise of some Cause of that Fall, which is also true: But because they see nothing but the Stone, and not what pushes it, they, by a precipitate Judgment, have concluded, that what they could not see was not, and that therefore the Stone fell of itself by an inward Principle, without any Thing pushing it downwards; and it is to that confuse *Idea*, and which proceeded from their Error, they have fixed the Name of *Gravity*.

The sole Remedy of this Inconvenience is to renounce the Prejudices of our Infancy, and to believe nothing, by what we have judged of it then, but by what we judge of it now.

THE SECOND PART.

Containing Reflections Men have made on their Judgments; and first of Propositions.

After we have conceived Things by our Ideas, we compare those Ideas together; and finding that some of them agree among themselves, and others do not agree, we join them or disunite them, which is called to *affirm* or to *deny*, and generally to *judge*.

This Judgment is also called *Proposition*, and it is easy to see that it must have two Terms; one of which is *affirmed* or *denied*, called Subject; and the other which is *affirmed* or *denied*, called *Attribute* or *Predicate*. For Example, in this Proposition the *Earth is round*, the *Earth* is the Subject, *round* is the *Attribute*, and both joined together are called *Terms* or *Extremes* of the Proposition; for it is not sufficient to conceive those two Terms, but our Mind must join them together or part them, and this Action of our Mind is marked by the Verb Substantive *Est*, either alone when we affirm, or joined with a negative Particle when we deny; as in the Example, the *Earth is round*, which is an Affirmative, the Verb *is*, is alone; and in this other, the *Earth is not round*, which is a Negative of the former, the Verb *is*, is joined with the negative Particle *not*.

But though all *Propositions* includes necessarily these three Things; it notwithstanding may have but two Words, or even one. For Men wanting to abridge their Discourses, have made an infinite Number of Words, which signify together the *Affirmative*, i. e. that signified by the Verb *is*, and the *Attribute* affirmed. Such are all Verbs, except that called Substantive; as *God exists*, i. e. *is existant*; *God loves Men*, i. e. *God is loving Men*. And the Substantive when alone, as when I say, *I think then I am*, is no longer purely Substantive, because then the most general of Attributes, which is the Being is added to it. For *I am* signifies *I am a Being*, *I am something*.

Sometimes also the *Subject* and the *Affirmation*, are included in the same Word, as in the first and second Persons of the Verbs, especially in *Latin*, when I say *sum christianus*, for the Subject of that *Proposition* is *ego*, which is included in *sum*. Whence it appears that in the first and second Persons of the Verbs, which by their Nature include already the Affirmation and the Attribute, as *vidi*, *veni*, *vici*, are three *Propositions*: Whereby it is seen that all Proposition is Affirmative or Negative, and that's what is marked by the Verb affirmed or denied.

But there is another Difference in the *Propositions*, which proceeds from their Subject, which is to be *universal* or *particular*; because the Terms are either singular, or common and universal. And the *universal* Terms can be taken, either according to their whole Extent, in joining them to the universal Signs expressed or understood, as *omnis*, *all*, for the *Affirmative*, *nullus*, *none*, for the *Negation*; *all Men*, *no Man*. Or according to an undeterminate Part of their Extent, which is when the Word *some* is added to it, as *some Man*, *some Men*, or others according to the Use of the Languages.

Whence a great Difference happens in the *Propositions*, for when the Subject of the *Proposition* is a common Term, taken in its whole Extent, the *Proposition* is called *universal*; whether it be *Affirmative*, as *all impious Men are mad*, or *Negative*, as *no vicious Man is happy*. And when the common Term is taken, but according to an indeterminate Part of its Extent, because confined by the indeterminate Word *some*, the *Proposition* is called *particular*; whether it be *Affirmative*, as *some Man is cruel*, or *Negative*, as *some Prince is not happy*. But when the Subject of a *Proposition* is singular, as when I say, *Don Philip has conquered Savoy*, it is called singular.

But though this *singular Proposition* be different from the *universal*, in that the Subject thereof is not common, it, notwithstanding, must rather be referred to it, than to the *particular*; because its Subject is taken according to its whole Extent, since it cannot be taken wider than for one, which makes the Essence of an *universal Proposition*, and whereby it is distinguished from the *Particular*; for it matters not for the Universality of a *Proposition*, that its Subject be great or little, provided, let it be what it will, it is taken entire; and therefore the singular *Propositions*, supply the Place of universal, in the Argumentation.

Therefore all *Propositions* can be reduced to four Kinds, which have been marked by these four Vowels, A, E, I, O, to ease the Memory.

A. The universal Affirmative, *all Hypocrites are Knaves*.

E. The universal Negative, *no Knaves are respected*.

I. The particular Affirmative, as, *some Hypocrites are rich*.

O. The particular Negative, as, *some Hypocrites are not rich*.

According to the following two Verses:

Afferit A, negat E, verum generaliter ambo.

Afferit I, negat O, sed particulariter ambo.

The *Universality* or *Particularity* of the *Propositions* are also commonly called *Quantity*; and the *Affirmation* or *Negation*, depending on the Verb, which is considered as the Form of the *Proposition*, is called *Quality*. — And thus A and E agree according to the *Quantity*, and differ according to the *Quality*; and likewise I and O. But A and I agree according to the *Quality*, and differ according to the *Quantity*.

and differ according to the *Quantity*; and likewise E and O. *Propositions* are divided besides according to the Matter into true and false; and it is clear that there can be none, which are neither true nor false; since all *Propositions*, marking the Judgment we make of Things, are true when that Judgment is conformable to Truth, and false when not conformable.

But because we often want Light, to discover Truth and Falshood, besides the *Propositions* which appear true, and those which appear certainly false; there are some which seem true; but the Truth thereof is not so evident, as to leave us no Room to suspect it; or which seem false; but of the Falshood thereof we are not very certain. These *Propositions* are called probable; the former being the *most probable*, and the latter, the *less probable*.

As to the *Opposition of Propositions, which have the same Subject and the same Attribute*. — We have said already, that there are four Sorts of *Propositions*, A. E. I. O. it is asked now, what Agreement or Disagreement they have together, when divers Sorts of *Propositions* are made of the same Subject, and of the same Attribute? It is what we call *Opposition of Propositions*.

It is easy to see that *that Opposition* cannot be but of three Sorts, though one of the three is subdivided into two others. For if they be opposed in *Quantity* and *Quality* together, as A. O. and E. I. they are called *Contradictory*, as, *all Men are Animal, some Men are not Animal, no Man is impeccable, some Men are impeccable*.

If they differ in *Quantity* only, and agree in *Quality*, as A. I. and E. O. they are called *subaltern*, as *all Men are Animal, some Men are Animal; no Man is impeccable, some Men are not impeccable*.

And if they differ in *Quality* and agree in *Quantity*, then they are called *Contrary*, or *Sub-contrary*; *Contrary*, when they are universal, as *all Men are Animal, no Man is Animal*. *Sub-contrary*, when they are particular, as, *some Men are Animal, some Men are not Animal*.

Now in considering those opposite *Propositions*, according to Truth or Falshood, it is easy to judge, 1. That the *Contradictories* are never true and false together; but if one of them is true, the other is false, or if one is false, the other is true; for if it be true, that *all Men are Animal*, it cannot be true, that *some Men are not Animal*; and if, on the contrary, it is true, that *some Men are not Animal*, it is not true, that *all Men are Animal*.

2. The *Contraries* can never be true together; but they can be both false. They cannot be true, because the *Contradictories* would be true; for if it be true, that *all Men are Animal*, it is false, that *some Men are not Animal*; which is the *Contradictory*, and consequently still more false, that *no Man is Animal*, which is the *Contrary*.

But the Falshood of one does not carry off the Truth of the other. For it may be false that *all Men are just*, without being true, that *no Man is just*; for there can be *just Men*, though *all Men are not just*.

3. The *Sub-Contraries*, by a Rule quite opposite to that of the *Contraries*, can be true together; as these two, *some Men are just, some Men are not just*, because Justice can be agreeable to some Men, and not to others. And thus Affirmation and Negation do not regard the same Subject, since *some Men* are taken for one Part of Men, in one of the *Propositions*, and for the other Part in the other. But they cannot be both false, since otherwise the *Contradictories* would be both false. For if it was false, that *some Men are just*, it would be true, that *no Man is just*, which is the *Contradictory*, and with much more Reason, that *some Men are not just*, which is the *Sub-contrary*.

For the *Subaltern*, it is not a true Proposition, since the particular is a Sequel of the general. For if *all Men are Animal, some Men are Animal*. If *no Man is a Sign, some Men are not Signs*; therefore the Truth of the Universals, carries off that of the Particulars; but the Truth of the Particulars does not carry off that of the Universals. For it does not follow, that because it is true, that *some Men are just*, it is true, likewise, that *all Men are just*. On the contrary, the Falshity of the

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Particulars carries off the Falshity of the Universals. For if it is false, that *some Men are impeccable*, it is still more false, that *all Men are impeccable*. But the Falshity of the Universals, does not carry off the Falshity of the Particulars; for though it be false, that *all Men are just*, it doth not follow hence, that it is a Falshity to say, that *some Men are just*. Whence it follows, that there are some Occasions where these *subaltern Propositions* are both true, and others, where they are both false.

I say nothing of the Reduction of the Propositions, opposite in one and the same Sense, because that is entirely needless, and the Rules given relating to them, are most of them true, but in the *Latin Tongue*.

As to *simple and composite, &c. Propositions*. — I have said that all *Propositions* must have at least a Subject and an Attribute; but it does not follow hence, that a Proposition cannot have more than one Subject, and more than one Attribute. Therefore those which have but one Subject and one Attribute, are called *simple*; and those which have more than one Subject, and more than one Attribute, are called *composite*, as when I say, *Good and Evil, Life and Death, Poverty and Riches, come from the Lord*; that Attribute, *to come from the Lord*, is affirmed, not of a single Subject, but of several, viz. of *Good and Evil, &c.*

But before I explain those *composite Propositions*, we must observe, that some of them appear such, which notwithstanding are *simple*; for the Simplicity of a Proposition is taken from the Unity of the Subject and of the Attribute. But there are some Propositions which have properly but one Subject and one Attribute, but the Subject or Attribute thereof is a complex Term, which includes other Propositions which may be called *incident*, which makes but Part of the Subject or Attribute, being joined to it by the Relative Pronoun, *who, whom*, the Property thereof is to join together several Propositions, so that they all compose but one single Proposition. Thus when JESUS CHRIST says, *He who does the Will of my Father who is in Heaven, shall enter into the Kingdom of Heaven*; the Subject of that Proposition contains two Propositions, since it contains two Verbs, but as they are joined by relative Pronouns, they make but one Part of the Subject; as when I say, *Good and Evil come from the Lord*, there are properly two Subjects, because I affirm equally of the one and of the other, that they come from God. And the Reason of this is, that the Propositions joined to others by *who's*, either are but very imperfect Propositions, or are not so much considered as Propositions made then, as Propositions which have been made before, and which are then conceived only as if they were simple Ideas; whence it happens, that it is indifferent to enunciate those *incident Propositions*, by Adjective Nouns, or by Participles, without Verbs and without *who's*, or with Verbs and with *who's*, for it is the same Thing to say, *an invisible God has created the visible World*; or, *God who is invisible, has created the World which is visible*; *Alexander, the bravest of all Kings, has vanquished Darius, or Alexander, who was the bravest of all Kings, has vanquished Darius*. And in one and the other, my principal End is, not to affirm that God is invisible, or that *Alexander* is the bravest of all Kings; but supposing the one and the other as affirmed before, I affirm of God conceived as invisible, that he has created the visible World; and of *Alexander*, conceived as the bravest of all Kings, that he has vanquished *Darius*.

But if I was to say, *Alexander has been the bravest of all Kings, and the Vanquisher of Darius*, it is visible that I should affirm equally of *Alexander*, and that he was the bravest of all Kings, and that he had vanquished *Darius*; and therefore it is with Reason that these last Sorts of Propositions, are called *composite Propositions*; when as the others may be called *complex Propositions*, that's to say, on the Subject and on the Attribute, or on both; or on the Form only.

1. The Complexion falls on the Subject when the Subject is a complex Term, as in this Proposition, *every Man who fears nothing is a King*: *Rex est qui metuit nihil*.

*Beatus ille qui procul negotiis,
Ut prisca gens mortalium,
Paterna rura bobus exerceat suis,
Solutus omni senectute.*

4 P

For

Hunger, Thirst, &c. and this is the Cause of the Confusion of those *Ideas*.

As we have been sooner Infants than Men, and the external Things have worked upon us, in causing various Sentiments in our Soul, by the Impressions they made on our Bodies, the Soul perceiving that it was not by the Will those Sentiments were excited within her, but were only occasioned by some Bodies, as that she felt Heat when she approached the Fire, was not contented to judge that there were some external Thing which caused those Sentiments; she is even gone further, believing that what was in those Objects was entirely semblable to the Sentiments or Ideas they had occasioned within her; and has formed Ideas of those Judgments in transporting those Sentiments of Heat, Colour, &c. into the external Things themselves. And these are the *confuse* and *obscure Ideas* we have of the sensible Qualities, the Soul having added her erroneous Judgments, to what Nature had discovered to her.

And as those *Ideas* are not natural but only arbitrary, they have acted towards them in a very extravagant Manner: For tho' *Heat* and *Burn* be but two Sentiments, one weaker and the other stronger, the Heat has been put in the Fire, and it has been said, that the Fire had Heat, but the *Burn* has not been put in it, or the Pain felt in approaching too near; for it is not said that the Fire has any Pain.

But if Men have seen that the Pain is not in the Fire which burns the Hand, perhaps they have deceived themselves, in believing that it is in the Hand which the Fire burns, whenas it taking it right, it is but in the Mind, though occasioned by what passes in the Hand; because the Pain of the Body is nothing else but a Sentiment of Aversion which the Soul conceives of some Motion contrary to the natural Constitution of his Body. In fact, what shews that the Pain called corporal is in the Soul and not in the Body, is that the same Things which cause us Pain, when we think of them, cause us none when our Mind is employed elsewhere.

The *Idea* of *Gravity* which appears so clear, is no less *obscure* than the others abovementioned; for Children seeing Stones and other like Things fall downwards, they have formed from thence the *Idea* of a Thing which falls; which *Idea* is natural and true, and likewise of some Cause of that Fall, which is also true: But because they see nothing but the Stone, and not what pushes it, they, by a precipitate Judgment, have concluded, that what they could not see was not, and that therefore the Stone fell of itself by an inward Principle, without any Thing pushing it downwards; and it is to that confuse *Idea*, and which proceeded from their Error, they have fixed the Name of *Gravity*.

The sole Remedy of this Inconvenience is to renounce the Prejudices of our Infancy, and to believe nothing, by what we have judged of it then, but by what we judge of it now.

THE SECOND PART.

Containing Reflections Men have made on their Judgments; and first of Propositions.

After we have conceived Things by our Ideas, we compare those Ideas together; and finding that some of them agree among themselves, and others do not agree, we join them or disunite them, which is called to *affirm* or to *deny*, and generally to *judge*.

This Judgment is also called *Proposition*, and it is easy to see that it must have two Terms; one of which is *affirmed* or *denied*, called Subject; and the other which is *affirmed* or *denied*, called *Attribute* or *Predicate*. For Example, in this Proposition the *Earth is round*, the *Earth* is the Subject, *round* is the *Attribute*, and both joined together are called *Terms* or *Extreams* of the Proposition; for it is not sufficient to conceive those two Terms, but our Mind must join them together or part them, and this Action of our Mind is marked by the Verb Substantive *is*, either alone when we affirm, or joined with a negative Particle when we deny; as in the Example, the *Earth is round*, which is an Affirmative, the Verb *is*, is alone; and in this other, the *Earth is not round*, which is a Negative of the former, the Verb *is*, is joined with the negative Particle *not*.

But though all *Propositions* includes necessarily these three Things; it notwithstanding may have but two Words, or even one. For Men wanting to abridge their Discourses, have made an infinite Number of Words, which signify together the *Affirmative*, i. e. that signified by the Verb *is*, and the *Attribute* affirmed. Such are all Verbs, except that called Substantive; as *God exists*, i. e. *is existant*; *God loves Men*, i. e. *God is loving Men*. And the Substantive when alone, as when I say, *I think then I am*, is no longer purely Substantive, because then the most general of Attributes, which is the Being is added to it. For *I am* signifies *I am a Being*, *I am something*.

Sometimes also the *Subject* and the *Affirmation*, are included in the same Word, as in the first and second Persons of the Verbs, especially in *Latin*, when I say *sum christianus*, for the Subject of that *Proposition* is *ego*, which is included in *sum*. Whence it appears that in that same Language a single Word makes a *Proposition* in the first and second Persons of the Verbs, which by their Nature include already the Affirmation and the Attribute, as *vidi*, *veni*, *vici*, are three *Propositions*: Whereby it is seen that all Proposition is Affirmative or Negative, and that's what is marked by the Verb affirmed or denied.

But there is another Difference in the *Propositions*, which proceeds from their Subject, which is to be *universal* or *particular*; because the Terms are either singular, or common and universal. And the *universal* Terms can be taken, either according to their whole Extent, in joining them to the universal Signs expressed or understood, as *omnis*, *all*, for the *Affirmative*, *nullus*, *none*, for the *Negation*; *all Men*, *no Man*. Or according to an undeterminate Part of their Extent, which is when the Word *some* is added to it, as *some Man*, *some Men*, or others according to the Use of the Languages.

Whence a great Difference happens in the *Propositions*, for when the Subject of the *Proposition* is a common Term, taken in its whole Extent, the *Proposition* is called *universal*; whether it be *Affirmative*, as *all impious Men are mad*, or *Negative*, as *no vicious Man is happy*. And when the common Term is taken, but according to an indeterminate Part of its Extent, because confined by the indeterminate Word *some*, the *Proposition* is called *particular*; whether it be *Affirmative*, as *some Man is cruel*, or *Negative*, as *some Prince is not happy*. But when the Subject of a *Proposition* is singular, as when I say, *Don Philip has conquered Savoy*, it is called singular.

But though this *singular Proposition* be different from the *universal*, in that the Subject thereof is not common, it, notwithstanding, must rather be referred to it, than to the *particular*; because its Subject is taken according to its whole Extent, since it cannot be taken wider than for one, which makes the Essence of an *universal Proposition*, and whereby it is distinguished from the *Particular*; for it matters not for the Universality of a *Proposition*, that its Subject be great or little, provided, let it be what it will, it is taken entire; and therefore the singular *Propositions*, supply the Place of universal, in the Argumentation.

Therefore all *Propositions* can be reduced to four Kinds, which have been marked by these four Vowels, A, E, I, O, to ease the Memory.

A. The universal Affirmative, *all Hypocrites are Knaves*.

E. The universal Negative, *no Knaves are respected*.

I. The particular Affirmative, as, *some Hypocrites are rich*.

O. The particular Negative, as, *some Hypocrites are not rich*.

According to the following two Verses:

Afferit A, negat E, verum generaliter ambo.

Afferit I, negat O, sed particulariter ambo.

The *Universality* or *Particularity* of the *Propositions*, are also commonly called *Quantity*; and the *Affirmation* or *Negation*, depending on the Verb, which is considered as the Form of the *Proposition*, is called *Quality*.—And thus A and E agree according to the *Quantity*, and differ according to the *Quality*; and likewise I and O. But A and I agree according to the *Quality*, and

and differ according to the *Quantity*; and likewise E and O. *Propositions* are divided besides according to the Matter into true and false; and it is clear that there can be none, which are neither true nor false; since all *Propositions*, marking the Judgment we make of Things, are true when that Judgment is conformable to Truth, and false when not conformable.

But because we often want Light, to discover Truth and Falshood, besides the *Propositions* which appear true, and those which appear certainly false; there are some which seem true; but the Truth thereof is not so evident, as to leave us no Room to suspect it; or which seem false; but of the Falshood thereof we are not very certain. These *Propositions* are called probable; the former being the *most probable*, and the latter, the *less probable*.

As to the Opposition of *Propositions*, which have the same Subject and the same Attribute. — We have said already, that there are four Sorts of *Propositions*, A. E. I. O. it is asked now, what Agreement or Disagreement they have together, when divers Sorts of *Propositions* are made of the same Subject, and of the same Attribute? It is what we call *Opposition of Propositions*.

It is easy to see that that Opposition cannot be but of three Sorts, though one of the three is subdivided into two others. For if they be opposed in *Quantity* and *Quality* together, as A. O. and E. I. they are called *Contradictory*, as, *all Men are Animal, some Men are not Animal, no Man is impeccable, some Men are impeccable*.

If they differ in *Quantity* only, and agree in *Quality*, as A. I. and E. O. they are called *subaltern*, as *all Men are Animal, some Men are Animal; no Man is impeccable, some Men are not not impeccable*.

And if they differ in *Quality* and agree in *Quantity*, then they are called *Contrary*, or *Sub-contrary*; *Contrary*, when they are universal, as *all Men are Animal, no Man is Animal*. *Sub-contrary*, when they are particular, as, *some Men are Animal, some Men are not Animal*.

Now in considering those opposite *Propositions*, according to Truth or Falshood, it is easy to judge, 1. That the *Contradictories* are never true and false together; but if one of them is true, the other is false, or if one is false, the other is true; for if it be true, that *all Men are Animal*, it cannot be true, that *some Men are not Animal*; and if, on the contrary, it is true, that *some Men are not Animal*, it is not true, that *all Men are Animal*.

2. The *Contraries* can never be true together; but they can be both false. They cannot be true, because the *Contradictories* would be true; for if it be true, that *all Men are Animal*, it is false, that *some Men are not Animal*; which is the *Contradictory*, and consequently still more false, that *no Man is Animal*, which is the *Contrary*.

But the Falshood of one does not carry off the Truth of the other. For it may be false that *all Men are just*, without being true, that *no Man is just*; for there can be *just Men*, though *all Men are not just*.

3. The *Sub-Contraries*, by a Rule quite opposite to that of the *Contraries*, can be true together; as these two, *some Men are just, some Men are not just*, because Justice can be agreeable to some Men, and not to others. And thus Affirmation and Negation do not regard the same Subject, since *some Men* are taken for one Part of Men, in one of the *Propositions*, and for the other Part in the other. But they cannot be both false, since otherwise the *Contradictories* would be both false. For if it was false, that *some Men are just*, it would be true, that *no Man is just*, which is the *Contradictory*, and with much more Reason, that *some Men are not just*, which is the *Sub-contrary*.

For the *Subaltern*, it is not a true Proposition, since the particular is a Sequel of the general. For if *all Men are Animal, some Men are Animal*. If *no Man is a Sign, some Men are not Signs*; therefore the Truth of the Universals, carries off that of the Particulars; but the Truth of the Particulars does not carry off that of the Universals. For it does not follow, that because it is true, that *some Men are just*, it is true, likewise, that *all Men are just*. On the contrary, the Falshity of the

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Particulars carries off the Falshity of the Universals. For if it is false, that *some Men are impeccable*, it is still more false, that *all Men are impeccable*. But the Falshity of the Universals, does not carry off the Falshity of the Particulars; for though it be false, that *all Men are just*, it doth not follow hence, that it is a Falshity to say, that *some Men are just*. Whence it follows, that there are some Occasions where these *subaltern Propositions* are both true, and others, where they are both false.

I say nothing of the Reduction of the Propositions, opposite in one and the same Sense, because that is entirely needless, and the Rules given relating to them, are most of them true, but in the *Latin Tongue*.

As to simple and composite, &c. *Propositions*. — I have said that all *Propositions* must have at least a Subject and an Attribute; but it does not follow hence, that a Proposition cannot have more than one Subject, and more than one Attribute. Therefore those which have but one Subject and one Attribute, are called *simple*; and those which have more than one Subject, and more than one Attribute, are called *composite*, as when I say, *Good and Evil, Life and Death, Poverty and Riches, come from the Lord*; that Attribute, *to come from the Lord*, is affirmed, not of a single Subject, but of several, viz. of *Good and Evil, &c.*

But before I explain those *composite Propositions*, we must observe, that some of them appear such, which notwithstanding are *simple*; for the Simplicity of a Proposition is taken from the Unity of the Subject and of the Attribute. But there are some Propositions which have properly but one Subject and one Attribute, but the Subject or Attribute thereof is a complex Term, which includes other Propositions which may be called *incident*, which makes but Part of the Subject or Attribute, being joined to it by the Relative Pronoun, *who, whom*, the Property thereof is to join together several Propositions, so that they all compose but one single Proposition. Thus when JESUS CHRIST says, *He who does the Will of my Father who is in Heaven, shall enter into the Kingdom of Heaven*; the Subject of that Proposition contains two Propositions, since it contains two Verbs, but as they are joined by relative Pronouns, they make but one Part of the Subject; as when I say, *Good and Evil come from the Lord*, there are properly two Subjects, because I affirm equally of the one and of the other, that they come from God. And the Reason of this is, that the Propositions joined to others by *who's*, either are but very imperfect Propositions, or are not so much considered as Propositions made then, as Propositions which have been made before, and which are then conceived only as if they were simple Ideas; whence it happens, that it is indifferent to enunciate those *incident Propositions*, by Adjective Nouns, or by Participles, without Verbs and without *who's*, or with Verbs and with *who's*, for it is the same Thing to say, *an invisible God has created the visible World*; or, *God who is invisible, has created the World which is visible*; *Alexander, the bravest of all Kings, has vanquished Darius*, or *Alexander, who was the bravest of all Kings, has vanquished Darius*. And in one and the other, my principal End is, not to affirm that God is invisible, or that *Alexander* is the bravest of all Kings; but supposing the one and the other as affirmed before, I affirm of God conceived as invisible, that he has created the visible World; and of *Alexander*, conceived as the bravest of all Kings, that he has vanquished *Darius*.

But if I was to say, *Alexander has been the bravest of all Kings, and the Vanquisher of Darius*, it is visible that I should affirm equally of *Alexander*, and that he was the bravest of all Kings, and that he had vanquished *Darius*; and therefore it is with Reason that these last Sorts of Propositions, are called *composite Propositions*; when as the others may be called *complex Propositions*, that's to say, on the Subject and on the Attribute, or on both; or on the Form only.

1. The Complexion falls on the Subject when the Subject is a complex Term, as in this Proposition, *every Man who fears nothing is a King: Rex est qui metuit nihil*.

*Beatus ille qui procul negotiis,
Ut prisca gens mortalium,
Paterna rura bobus exerceat suis,
Solutus omni senectute.*

+ P

For

For the Verb *est*, is understood in this last Proposition, and *Beatus* is the Attribute thereof, and all the rest the Subject.

2. The *Complexion* falls on the Attribute, when the Attribute is a complex Term, as, *Piety is a Virtue, which renders Man happy in the greatest Adversities.*

Sum pius Æneas famâ super Æthera notus.

But it must be particularly observed here, that all Propositions composed of active Verbs, and of their Regimen, can be called complex, and contain, in some Manner, two Propositions. As if I say, for Example, *Brutus* has killed some Body, and that he whom he has kill'd, was a Tyrant. Whence that Proposition can be contradicted in two Manners, or by saying that *Brutus* has not kill'd any Body, or that he whom he has kill'd was not a Tyrant. Which it is very necessary to observe; because when these Sorts of Propositions enter into an Argument, sometimes but one Part thereof is proved in supposing the other; which obliges often to reduce those Arguments into the most natural Form, to change the Active into the Passive, that the Part which is proved may be expressed directly.

3. Sometimes the *Complexion* falls on the Subject, and on the Attribute, the one and the other being a complex Term; as in this Proposition, *the Great who oppressed the Poor, will be punished by God, who is Protector of the Oppressed.*

*Ille ego qui quondam gracili modulatus avenâ
Carmen, & egressus silvis vicina coëgi
Ut quamvis avido parerent arva colono
Gratum opus agricolis: at nunc borentia martis,
Arma virumque cano Trojæ qui primus ab oris,
Italiam fato profugus Lavinaque venit
Littora.*

The three first Verses, and half of the fourth, compose the Subject of this Proposition, the rest composes its Attribute, and the Affirmation is included in the Verb *Cano*.

These are the three Manners, according to which Propositions can be complex as to their Matter, *i. e.* as to their Subject, and Attribute.

As to the Nature of incident Propositions, which make Part of the Complex. — Before I speak of the Propositions, the *Complexion* thereof falls on the Form, *i. e.* on the Affirmation or Negation, there are several important Remarks to be made on the Nature of *incident Propositions*, which make Part of the Subject or of the Attribute of those which are *complex* according to the Matter.

1. We have seen already, that *incident Propositions* are those whose Subject is the Relative *who*, as, *Men who are created to know and to love God*, or, *Men who are pious*, taking off the Term *Men*, the rest is an *incident Proposition*.

But it must be observed, that the Additions of the *complex Terms* are of two Sorts, the one which may be called simple Explications, which is when the Addition changes nothing in the Idea of the Term, because what is added to it, is generally agreeable to it, and in its whole Extent; as in the first Example, *Men who are created to know and to love God*.

The others which may be called *Determinations*, because what is added to that Term is not agreeable to it in its whole Extent, confines and determines the Signification thereof, as in the second Example, *Men who are pious*; according to this it may be said that there is an *who* explicative, and an *who* determinative.

When the *who* is explicative, the Attribute of the *incident Proposition* is affirmed of the Subject to which it relates, though it be but incidently with Regard to the total Proposition, so that the Subject itself can be substituted to the *who*, as it can be seen in the first Example, *Men who have been created to know and to love God*. For it can be said, *Men have been created to know and to love God*.

But when the *who* is determinative, if the Attribute of the *incident Proposition* is not properly affirmed of the Subject, to which the *who* relates, for after we have said, *Men who are pious are charitable*, we should substitute the Word *Men* to *who*, saying, *Men are pious*,

this Proposition would be false, because it would be to affirm the Word *pious* of Men as Men; but in saying, *Men who are pious, are charitable*, we affirm neither of Men in general, nor of any Men in particular, that they are pious; but the Mind joining together the Idea of *pious* with that of *Men*, and making of it a total Idea, judges that the Attribute *charitable* is agreeable to that total Idea. Thus the whole Judgment expressed in the *incident Proposition*, is only that whereby our Mind judges that the Idea of *pious*, is not incompatible with that of *Men*, and therefore can consider them as join'd together, and examine afterwards what is agreeable to them according to that Union.

As to the Falsity found in the complex Terms, and in the incident Propositions. — What we have said, can serve to resolve a famous Question, which is to know, If Falsity cannot be found but in the *Propositions*, and if there is none in the Ideas, and in the simple Terms?

Note, That I speak of the Falsity rather than of the Truth, because there is a Truth in Things with Regard to God's Spirit, whether Men think or not think of it; but there can be no Falsity but with Regard to Man's Mind, or some other Mind subject to Error, which judges falsely that a Thing is what it is not.

It is asked, then, If that Falsity is found but in *Propositions* and *Judgments*? which Question is commonly answered in the Negative; which Answer is true in one Sense, though there is sometimes a Falsity, not in the simple Ideas, but in the complex Terms; for some Judgment or some Affirmation, express or virtual, suffices for that. It is what we'll understand better, if we consider the two Sorts of complex Terms; one, the *who* whereof it is explicative, and of the other, determinative.

In the first Sort of complex Terms, it is not surprising if there can be a Falsity, because the Attribute of the *incident Proposition* is affirmed of the Subject to which the *who* relates; Alexander *who* is Philip's Son, I affirm, though incidently, of Alexander, that he is the Son of Philip, and consequently there is a Falsity in that, Alexander is not Philip's Son.

But two or three important Things must be observ'd, 1. That the Falsity of an *incident Proposition*, most commonly does not hinder the Truth of the principal Proposition; for Example, Alexander *who* was Philip's Son, *vanquished the Persians*. This Proposition must pass for Truth, if even it could be said, that Alexander was not Philip's Son, because the Affirmation of the principal Proposition, falls on Alexander only, and what has been incidently added to it, though false, does not hinder from its being true, that Alexander vanquished the Persians.

But if, notwithstanding, the Attribute of the principal Proposition, had Report to the *incident Proposition*, as if I was to say, Alexander, Philip's Son, *who* was Amintas's Grandson, then the Falsity of the *incident Proposition*, would render the principal Proposition false.

2. The Titles commonly given to certain Dignities, can be given to all those who possess that Dignity; though what is signified by that Title, is in no Manner agreeable to them. Thus we see that St. Paul, in the Acts, gives the Title of *most good*, and *most excellent*, to Festus, Governor of Judea, because it was commonly given to those Governors.

3. It is not so when a Person is the Author of a Title which he gives to another, and gives it him of his own Accord, not according to the Opinion of others, or a popular Error; for then, the Falsity of those Propositions may be justly imputed to him. Thus when a Man says, Aristotle, *who* is the Prince of the Philosophers, *believed that the Origin of the Nerves was in the Heart*; no Body could accuse him of Falshood, because Aristotle is not the most excellent of all Philosophers, for it suffices that he follows in that the common Opinion, though false. But if one was to say, M. Gassendi, *who* is the most learned of all Philosophers, *believed that there is a Vacuum in Nature*, there would be Room to dispute with that Person, the Quality he would give to M. Gassendi, and to render him responsible for the Falshood, which one could pretend to find in that *incident Proposition*. Therefore one can be accused of Falshood, for

for giving to the same Person a Title he does not deserve, and not be accused of Falshood, in giving him another which he still deserves less; for Example, the Pope, *John XII.* was neither holy, nor chaste, nor pious, as *Baronius* acknowledges it; and notwithstanding those who called him *most holy*, could not be accused of Falshood, and those who had called him *most chaste*, and *most pious*, had been very great Lyers, though they had only done it by incident Propositions, as if they had said, *John XII. most chaste Pontiff has decreed such a Thing.*

Thus far for the first Sort of incident Propositions, the *who* whereof is explicative. As to the others the *who* whereof is *determinative*, as *Men who are pious*, *Kings who love their Subjects*; it is certain, that commonly they are not susceptible of Falshood, because in them the Attribute of the incident Proposition is not affirmed of the Subject to which it relates. For if one says, for Example, *Ministers who are neither partial nor interested, are to be esteemed*: He does not pretend to say thereby, that all Ministers are arrived to that Perfection.

As to different Sorts of composed Propositions. — We have said already, that composed Propositions are those which have a double Subject or a double Attribute; of which there are two Sorts; one where the Composition is expressly marked, and the other where it is more hidden, and for that Reason called by Logicians *Explicables*, which want to be expounded or explained.

Those of the first Sort can be reduced to six Species, viz. *Copulatives* and *Disjunctives*, *Conditionals* and *Conjunctals*, *Relatives* and *Discretives*.

Copulative Propositions, are those which include either several Subjects or several Attributes, joined by an Affirmative or negative Conjunction, i. e. *and* or *nor*; for *nor* in those Propositions has the same Effect of *and*; since the *nor* signifies *and* with a Negative which falls on the Verb, and not the Union of the two Words it joins, as if I say, that *Science and Riches do not make a Man happy*, I unite as much Science to Riches, in affirming of the one and of the other; that they don't render a Man happy, as if I was to say; that Science and Riches render a Man vain.

There can be distinguished three Kinds of those Propositions.

1. When they have several Subjects. — *Mors & vita in manibus lingue*, Life and Death in the Power of the Tongue.

2. When they have several Attributes.

*Auream quisquis mediocritatem
Diligit, tutus caret obsoleto.
Sordibus tecti, caret invidenda
Regibus aula.*

i. e. He that loves Mediocrity, which is estimable in all Things, is neither lodged meanly nor magnificently.

3. When they have several Subjects and several Attributes.

*Non Dominus & fundus, non ætis acervus & auri,
Ægroto Domini deduxit corpore febris,
Non animo curas.*

i. e. Neither Houses nor Lands, nor the greatest Heaps of Gold and Silver can cure a Fever, nor free the Mind from Inquietude and Sorrow.

The Truth of these Propositions depends of the Truth of the two Parts; therefore if I say, *Faith and a good Life are necessary to Salvation*, that's true; because they are both necessary to Salvation; but if I was to say, *a good Life and Riches are necessary to Salvation*; the Proposition would be false, for if a good Life is necessary to Salvation, Riches are not.

The Propositions considered as negative and contradictory with Regard to the Copulatives, and to all the others composite, are not all those where Negations are found, but only those where the Negation falls on the Conjunction, which is done in divers Manners, as in placing the *Non* at the Head of the Proposition, *Non enim amas deseris*, says St. *Augustin*, i. e. it cannot be supposed that you love the Person you abandon.

It is also in that Manner that a Proposition is rendered contradictory to the Copulative, in denying expressly the Conjunction, as when one says, that *Love and Majesty*

do not agree together.

Disjunctive Propositions are of a great Use, and they are those where enters the disjunctive Conjunction, *vel*, or; for Example; — *Love either finds Friends equal, or renders them equal. He that lives in an entire Solitude is a Beast or an Angel*, (says *Aristotle*).

The Truth of these Propositions depends of the necessary Opposition of the Parts, which admits of no Medium; but as it is necessary they should admit none at all to be necessarily true, it suffices that they commonly admit none to be considered as morally true: Therefore it is absolutely true that an Action done with Judgment is either good or bad, the Theologians shewing, that there are none indifferent; but when it is said that Men are actuated by no other Motive than that of Interest or of Fear; that is not absolutely true, since there are some who are actuated by none of those Passions, but only by the Consideration of their Duties; and therefore the Truth which can be in it, is, that those two Passions are the Master-springs which move most Men.

Propositions contradictory to the Disjunctives are those where the Truth of the Disjunction is denied; which is done in *Latin*, as in all other composite Propositions, by placing the Negation at the Head: *Non omnis actio est bona vel mala*; and in French, *Il n'est pas vrai que toute action soit bonne ou mauvoise*; and in English, *It is not true that all Action is either good or bad*.

Conditional Propositions, are those which have two Parts joined by the Condition *if*, the first Part whereof, which is that where the Condition is, is called *antecedent*, and the other *consequent*; for Example, *if the Soul be spiritual* (this is the Antecedent) *it is immortal*, that's the Consequent.

This Consequence is sometimes *mediate*, and sometimes *immediate*. It is *mediate* when there is nothing in the Terms of the one or of the other Part, which joins them together, as if I say, *If the Earth is immobile the Sun turns*; *If God is just the Wicked will be punished*. These Consequences are very good; but they are not immediate, because the two Parts having not the common Term, they are not joined but by what one has in the Mind, and which is not expressed: That the Earth and the Sun being continually in different Situations one with Regard to the other, one must be necessarily immobile if the other moves.

When the Consequence is *immediate*, either the two Parts should have the same Subject, *if Death be a Passage to a happier Life, it is desirable*; *if you have refused to feed the Poor you have killed them*: — Or the same Attribute, *if all God's Trials should be dear to us, Infirmities should*. Or the Attribute of the first Part must be the Subject of the second; *If Patience be a Virtue, there are penible Virtues*. Or lastly, the Subject of the first Part should be the Attribute of the second, which cannot be but when that second Part is a Negative; *If all true Christians live according to the Gospel, there are but few true Christians*.

Causal Propositions, are those which contain two Propositions, by a Word of Cause, *because*, *forasmuch*, &c. for Example, *They can do it, because they believe they can*: *Such a Prince is unhappy, because he is hated of his Subjects*.

To these Propositions can also be reduced those called *reduplicative*; for Example, *Man as Man is reasonable*: *Kings as Kings depend from God alone*.

Relative Propositions, are those which include some Comparison and some Report. For Example, *Where the Treasure is, there lies the Heart. One is esteemed in the World in Proportion to his Riches*.

The Truth depends on the Justness of the Report, and they are controuled by denying the Report; for Example, *It is not true that one is esteemed in the World in Proportion to his Riches*.

Disjunctive Propositions, are those where different Judgments are made, in marking the Difference by the Particles, *but*, *notwithstanding*, and the like, either expressed or understood; for Example, *Fortune can rob us of our Estate, but not of our Heart*.

The Truth of this Sort of Proposition depends on the Truth of the two Parts, and of the Separation thereof: For though the two Parts were true, a Proposition of this

this Sort would be ridiculous, if there was no Opposition between them, as if I was to say, *Judas was a Thief, and notwithstanding could not bear that Mary Magdalene should pour her Perfumes on JESUS CHRIST.*

Note, That the most useful Propositions in the Sciences, are the *Division* and the *Definition*: Therefore,

DIVISION is the Partition of the whole into the Parts it is composed of. But as there are two Sorts of *whole*, there are likewise two Sorts of *Divisions*.

There is a *whole* composed of several Parts really distinct, called in *Latin*, *totum*, the Parts whereof are called *integrant Parts*. The *Division* of that *whole*, is properly called *Partition*. As when one divides a House into its Apartments, a City into its Quarters, a Kingdom or State into Provinces, Man into Body and Soul; the Body into its Members. The sole Rule of this *Division*, is to make the Enumerations very exact.

The other *whole*, is called in *Latin*, *omne*, and its Parts *subjective* or *inferior Parts*; because this *whole* is a common Term, and its Parts are the Subjects comprised in its Extent, as the Word *Animal* is a *whole* of that Nature, the *Inferiors* whereof, as *Man* and *Beast*, comprised in its Extent, are the *subjective Parts*. This *Division* retains properly the Name of *Division*, of which there are four Sorts.

The first, is when the Gender is divided by its Species, as this, *all Substance is Body or Spirit; all Animal is Man or Beast.*

The second is, when the Gender is divided by its Differences, as this, *all Animal is reasonable, or deprived of Reason; all Numbers are even or uneven; all Propositions are true or false.*

The third is, when a common Subject is divided by the opposed Accidents, it is capable of, or by its various Inferiors, at various Time; *as every Star is luminous by itself, or only by Reflexion; all Bodies are in Motion or at rest; all Men are in Health or sick.*

The fourth, of an Accident into its various Subjects; as the *Division* of Goods into those of the Mind and of the Body.

The Rules of the *Division* are, 1. That it should be entire, that's to say, that the Members of the *Division* contain all the Extent of the Term divided; as *even* and *uneven* includes all the Extent of the Term of the Number, there being none which is not *even* or *uneven*. There is scarce any Thing which occasions so many false Judgments, as the Want of Attention to this Rule; and what deceives is, that there are often Terms which appear so opposed, that they seem to admit of no Medium, though they have some. Thus between *Ignorant* and *Learned*, there is a certain Mediocrity of Sufficiency, which takes a Man from among the Ignorant, though it does not place him among the Learned. Between *vicious* and *virtuous*, there is a certain State, of which it can be said, what *Tacitus* said of *Galba*, *magis extra vitia, quam cum virtutibus*: For there are Men, who having no flagrant Vices, are not called vicious, and who doing no good, cannot be called virtuous; though before God, it is a great Vice to have no Virtue. Between being in Health and sick, there is the State of a Man indispos'd, or convalescent. Between the Day and the Night, there is the *Crepusculum*. Between the opposite Vices, there is the Medium of Virtue, as Piety between Impiety and Superstition. And sometimes that Medium is double, as between Avarice and Prodigality, there is Liberality and a laudable Parcimony. Between Timidity which fears all, and Temerity which fears nothing, there is Bravery and a reasonable Precaution, which makes one avoid the Danger it is not expedient to expose oneself to.

The second Rule, which is a Sequel of the first, is, that the Members of the *Division* be opposed as *even* and *uneven*, *reasonable* and *deprived of Reason*. But it must be observed, what we have already said in the first Part, that it is not necessary that the Differences, which make those opposite Members, be positive; but that it suffices one of them should be positive, and the other the Gender alone, with the Negation of the other Difference; and thereby the Members are more certainly opposite. Thus the Difference between Man and Beast, is but the Privation of Reason, which is nothing positive.

Imparity is but the Negation of Divisibility, into two equal Parts. The first Number has nothing but what the Composite has; the one and the other having Unity for Measure, the first being different from the Composite but in that it has no other Measure but Unity.

The third Rule, which is the Sequel of the second, is, that one of the Members should not be so confined within the other, that it may affirm of the other; though sometimes it can be confined in another Manner. For the Line is inclosed in the Surface, as the Term of the Surface; and the Surface in the solid, as the Term of the solid. But this does not hinder the Extent from being divided into Line, Surface, and Solid, because it cannot be said that the Line is the Surface, nor the Surface the Solid. On the contrary, the Number cannot be divided into *even*, *uneven*, and *square*, because all square Numbers being even or uneven, it is inclosed in the two first Numbers.

Neither are Opinions to be divided, into *true*, *false*, *probable*, because all probable Opinions are true or false. But they can be divided first into true and false, and afterwards the one and the other into certain and probable.

As to the Definition, called the Definition of a Thing.—I have spoke in the first Part of this Treatise, of the *Definitions* of the Name, and proved that they are not to be confounded with the *Definitions* of the Things; because the *Definitions* of the Names are arbitrary; when as the *Definitions* of the Things do not depend on us, but on what is contained in the true Idea of a Thing; and ought not to be taken for Principles, but are to be considered as Propositions, which often must be confirmed by Reason, and which can be contradicted. It is then but of this last Kind of *Definition* I am to speak in this Place.

There are two Sorts of this *Definition*; one more exact, which retains the Name of *Definition*; the other less exact, called *Description*.

The most *exact* is that which explains the Nature of a Thing by its essential Attributes, those of them which are common, being called *Genders*, and those which are proper, *Difference*.

Thus Man is defined a *rational Animal*; the Soul a *thinking Substance*; the Body an *extended Substance*; God a *perfect Being*. What is put for Gender in a *Definition*, must be, as much as possible, the nearest Gender to the defined, and not only the distant Gender.

We define also, sometimes, by the integrant Parts, as when we say, that Man is a Thing composed of a Soul and Body; but even then there is something which supplies the Place of the Gender, and the rest that of the Difference.

The less *exact Definition*, called *Description*, is that which gives some Knowledge of a Thing by the Accidents proper to it, and which determines it enough to give of it some Idea, which distinguishes it from others.

It is in that Manner Plants, Fruits, Animals, are described by their Figure, Bigness, Colour, and other like Accidents; and Descriptions of Poets and Orators are of that Nature.

There are, likewise, *Definitions* or *Descriptions* made by the Causes, the Matter, the Form, the End, &c. as if a Clock be defined an *Iron Machine, composed of different Wheels, the regular Motion whereof, is proper to mark the Hours.*

Three Things are necessary to a good *Definition*, viz. that it be *universal*, *proper*, and *clear*.

1. A *Definition* must be *universal*, i. e. must contain all the defined. Therefore the common *Definition* of Time, viz. that it is the *Mensuration of the Motion*, is, perhaps, not good; because there is a great Appearance, that Time measures as well Rest, as it does Motion; since it is as well said, that a Thing has been so long at Rest, as it is said, that it has been so long in Motion: So that it seems that Time is nothing else but the Duration of the Creature, in whatever is her State.

2. A *Definition* must be *proper*, i. e. must agree only with the defined. Therefore the common *Definition* of the Elements, a *simple corruptible Body*, does not seem good. For the celestial Bodies being no less simple than the Elements, there is no Reason to believe, that there are

are no Alterations made semblable to those made on Earth, since, without speaking of the Comets, Spots are observed in the Sun, which are formed there, and dissipated in the same Manner our Clouds are, though they be far bigger Bodies.

3. A Definition must be clear, i. e. must serve us to have a clearer and more distinct Idea of the Thing defined, and make us as much as possible, conceive the Nature thereof, so that it may help us to account for its principal Properties. It is what must be chiefly considered in the Definitions, and it is what's wanted in most of Aristotle's Definitions. For who has better conceived the Nature of the Motion, by this Definition, *Actus entis in potentia quatenus in potentia*: The Act of a Being in Power, as it is in Power? Is not the natural Idea we have of it, clearer than that? And to whom could it be of any Use to explain any of the Properties of Motion?

Note, That these Rules of the Division and Definition are the Conclusion of the second Part of my Logic; therefore,

THE THIRD PART.

Of Ratiocination, or Reasoning.

Note, That this Part I am going to treat of, and which contains the Rules of Reasoning, is esteemed the most important of all the Logic; and is almost the only one treated with Care, but we have some Reason to question if it be as useful as imagined. Most of Men's Errors, as I have observed elsewhere, proceed much more from their reasoning on false Principles, than from their reasoning ill according to their Principles. It seldom happens that we are deceived by Reasonings, which are no otherwise false, but because the Consequence thereof is ill drawn; and those who should not be capable to discover the Falsity thereof by the sole Light of their Reason, could not understand the Rules given with regard to them, and much less apply them. Which notwithstanding were those Rules considered but as speculative Truths, they would serve at least to exercise the Mind: And besides it must be confessed, that they are of Use on some Occasions to Men who being of a quick and penetrating Genius, are sometimes deceived by false Appearances through Want of Attention, to which the Reflections they would make on those Rules would be capable to remedy. Let it be how it will, this is what is commonly said of it, and something more than what is said of it. But to proceed,

As to the Nature of Ratiocination, or Reasoning.—Ratiocination being an Act of the Mind, whereby a Judgment is deduced from other antecedent Judgments, its Nature cannot be obscure; which notwithstanding it is disputed in the Schools, whether it should be called a certain Species of Judgment, or some Act distinct from Judgment; though, in my Opinion, it should be called a certain Species of Judgment, because it is an Act of the Mind, affirming or denying something, from other Things it had already affirmed or denied: For Example, from that it had affirmed that the Soul is a spiritual Substance, it concludes, that it is immortal, since all spiritual Substances are immortal; from that it has denied that Matter is incapable of Thinking, it denies its being capable of the Beatitude, since Thinking is necessary to render one happy.

This Species of Judgment has this, in particular, that it does not join an Idea with another, or separates it from another, before it has compared them both, by previous Judgments, with a third: For Example, in the following Reasoning, the Idea of an immortal Substance, is not joined with that of Mind, before they have been both compared with the Idea of a spiritual Substance, in this Manner:

All spiritual Substance is immortal:
But the Soul of Man is a spiritual Substance:
Then the Soul of Man is immortal.

The Reason of this is, that where the Connection, or Separation of the Attribute and Subject of some Question is not evident by itself, a third Idea is wanted, whereby that Connection or Separation can be discovered, which

third Idea is commonly called *Argument* or *Judgment*.

But if the Conjunction or Separation of the Terms of a Proposition be known by itself, then it wants no Argument for the Demonstration of the Truth or Falsity thereof: Such as are the Propositions known by themselves, called *Axioms*, v. gr. *the Whole is greater than a Part thereof*.

Whence it can be understood, that in all Ratiocination, there must be two previous Judgments, the first which should contain, and the second to shew that the first contains the third Judgment deduced from them both, which third Judgment is called sometimes *Conclusion*, or *Completion*; sometimes *Question*, or *Proposition*. For Question or Proposition don't differ from Conclusion or Completion, but in that a Conclusion is confirmed by some Argument; and a Question is only proposed, and not proved.

I say, 1. That two Judgments, at least, are always previous to a Conclusion; for nothing can be concluded from an Antecedent alone, unless some other Judgment can be understood joined with that Antecedent; v. gr. when I say, *I think, then I am*: I could not draw the Conclusion from the Antecedent, unless I had another conceived in my Mind, viz. all that thinks, is, or exists; but *I think, then I exist*.

I say, 2. That a Conclusion is contained, is one of the Premises, and declared in the other: For Example, this Conclusion, *then the Soul of Man is immortal*, is contained in this Judgment, *all spiritual Substance is immortal*; and is declared by this second Judgment, but *Man's Soul is a spiritual Substance*: For if the Soul be a spiritual Substance, it is certainly contained in that Proposition, *all spiritual Substance is immortal*: Therefore it must be considered as immortal.

Note, That though Ratiocination be most commonly promiscuously taken for Argumentation, whence it is called *long Ratiocination*, *short Ratiocination*; if notwithstanding Ratiocination be understood in a strict Sense, viz. for an Act of the Mind, deducing a Judgment from two Premises, it is certainly more simple than Argumentation.

Note, also, That a Ratiocination founded on a false Argument, is called a *Sophism*; that founded on a probable one, *Opinion*; and that founded on a certain and evident Reason, *Demonstration*. Of this, the *Sophism* produces *Error*; a probable Reason, *Opinion*; and Demonstration, *Science*: The Authority of God revealing Mysteries, produces the *divine Faith*; and Man's Testimony, the *human Faith*.

As to Argumentation and the different Species thereof.—When the Terms of a Proposition are not so well joined together, as to render their Connection apparent, then there wants an Argument to render it manifest; and then the Proposition, till then called *Question*, begins to be called *Conclusion* or *Completion*.

Argumentation, is defined a Discourse whereby a Judgment deduced from Premises, is expressed by distinct Propositions. Therefore in Argumentation there is something antecedent, something consequent, and a Connection besides of the Consequent with the Antecedent, which Connection is commonly called *Consequence*.

The Antecedent is that from which something is inferred, and contains at least two Judgments; whether they be expressed by two Propositions, or one of them be tacit.

The Consequent, is that which follows from the other, or a Proposition collected from at least two antecedent Propositions, one whereof is sometimes suppressed.

Lastly, the Consequence is commonly defined a Connection of the Consequent with the Antecedent; which is sometimes good, though the Consequent be false; v. gr. if this false Antecedent be advanced, *the Matter is a thinking Substance*, this false Consequent would be rightly inferred, *then the Matter can be happy*, because all that thinks can be happy; and vicissim, the Consequent can be true, and the Consequent false; as if it was said, *a Circle is round, then it differs from a Sphere*; for a Circle does not differ from a Sphere in that it is round, but because it is a Plane and the Sphere is solid.

All Argumentation is contained in the Induction and Syllogism, to the Induction is joined Example; and to

Syllogism are associated the *Sorites* and *Dilemma*, which contain virtually a great Number of *Syllogisms*: And likewise the *Enthymema*, which is a truncated *Syllogism*, and the *Epicherema*: Whence we commonly reckon seven Species of Argumentation, viz. the *Induction*, *Example*, *Sorites*, *Dilemma*, *Syllogism*, *Enthymema*, and *Epicherema*.

Induction, is an Argumentation, whereby in enumerating either the *Genders*, or the *Species*, or the *Individuals*, something universal, and common to all them is concluded; v. g. if one was to say, Gold can be melted, Silver can be melted, Copper, Tin, Lead, Iron, can be liquified, he could rightly conclude, *then all Metal can be liquified*. This Sort of Argumentation is invincible, if the Enumeration of the Things be entire and perfect; otherwise it is lame, and of no Force.

Example, is an Argumentation whereby of something singular, is inferred another such singular Thing; viz. if because I have employ'd a whole Year in learning something, I conclude, that as much Time is required for another to learn the same Thing: Which Sort of Argumentation must be used with Caution; for in those Things which seem semblable, there occurs often some Difference, which hinders a just Inference of the one from the other; for, v. gr. another does not want, perhaps, so much Time to learn something as I do: Whence Men never err oftener, than when they take their Arguments from Examples.

To Example belong the *Parable* and *Apologus*.—*Parable*, in this Place, is a Similitude taken from a fictitious Thing, and employed to persuade, what we design should be known; such was the Parable proposed by *Nathan* to *David*, 2 Sam. xii. and such are all the *Parables* proposed by *Christ* to his Disciples.

Apologus, is a Fable, whereby Men and Beasts, and even the Things insensible, are introduced speaking, in our Manner, between themselves; as the Cedar and Thistle, 2 Kings xiv. 9. and all Sorts of Beasts in *Æsop's Fables*.

Sorites, is an Argumentation, composed in such a Manner of several Propositions, that the Attribute of the Precedent be the Subject of the Consequent, till the Subject of the first Proposition be composed with the Attribute of the last. As if I were to prove that the Avaricious are miserable, I would proceed thus gradually:

*The Avaricious desire many Things,
Those who desire many Things, are in Want of many,
Those in Want of many Things, are miserable;
Then the Avaricious are miserable.*

The *Dilemma*, is a composed Argumentation, and very troublesome, in which after the Division of the Whole into its Parts, that is concluded of the Whole, what had been concluded of every Part: As if I was to prove that all Men, in this Life, are miserable, I would use the following *Dilemma*:

Every one that lives in this World, either indulges his Passions, or refrains them,

If he indulges them, he is miserable; since it is impossible he should ever entirely gratify them:

If he refrains them, he is miserable likewise; because he is forced to be at perpetual War with himself:

Therefore every one that lives in this World is miserable.

I have concluded that he who indulges his Passions is miserable, and likewise he who refrains them; which two Propositions are like the Parts of a Division; and hence I conclude in general, that all Men are miserable.

Syllogism is defined by *Aristotle*, lib. 1. prior. Analytic. c. 1. a certain Discourse, in which a Proposition, called Conclusion, is necessarily deduced from two other previous ones, one whereof called major, and the other minor; from that those two former Propositions, called Premises, are true, as when it is said,

*All that thinks exists;
But I think;
Then I exist.*

By which Definition, two Questions used to be proposed by the *Peripateticks* can be answered.

The first is, In what consists the Nature of the *Syllogism*? If in the three Propositions, or in the Conclusion only? For since the *Syllogism* consists of two Premises and of a Conclusion; its Nature must certainly consist in those three Propositions. Ratiocination consists in the

sole Conclusion, or the Illation of one from the other; because Ratiocination is more simple than Argumentation, and consists in the sole Act of the Mind; but Argumentation is a Discourse composed of Propositions.

The second Question is, if the Premises admitted, one is obliged to consent to the Conclusion? Which seems also certain from the Definition: For if the Conclusion follows necessarily from the Premises, then one cannot assent to the Premises without acquiescing to the Conclusion.

The *Enthymema*, is a truncated *Syllogism*, some Proposition whereof is reserved in the Mind; whence it is commonly said, that an *Enthymema* in the Mouth is a *Syllogism* in the Mind, v. g. *I think, then I exist.*

The *Epicherema*, is a *Syllogism* where each Proposition has its Proof, in this Manner:

All that thinks exists; for it cannot be that what does not exist should think:

But I think; for I perceive, I judge, I doubt, I will, &c. then I exist.

Note, That the other Sorts of Argumentation, except the *Syllogism*, want no further Explication; therefore we must only treat next of the *Syllogism*, and consider that there are two Sorts of *Syllogisms*, viz. one simple and the other conjunctive.

The simple *Syllogisms*, are those where the Medium is joined separately with each of the Terms of the Conclusion; therefore this Argument is simple.

Every good Prince is beloved of his Subjects:

Every pious King is a good Prince:

Then every pious King is beloved of his Subjects.

Because the Medium is joined separately with pious King, which is the Subject of the Conclusion, and with beloved of his Subjects, which is the Attribute thereof.

A simple *Syllogism* must have but three Terms, viz. the two Terms of the Conclusion, and only one intermediate, each whereof being repeated twice, make up three Propositions: The major, called also Thesis, which consists of the greater Extreme, and of the Intermediate: The minor, called also Assumption or Thesis, which consists of the less Extreme and of the Intermediate: And lastly, the Conclusion, composed of the greater and lesser Extreme: For the Intermediate never enters the Conclusion, as in this simple *Syllogism*.

All that thinks is spiritual,

All Mind thinks:

Then all Mind is spiritual.

Mind, in the lesser Extreme, because it is the Subject of the Conclusion: Spiritual, is the greater Extreme, because it is the Attribute of the Conclusion: And lastly, think is the intermediate Term, which is separately joined with each Extreme, viz. with the greater Extreme in the major, and with the lesser Extreme in the minor.

But because all Sorts of Conclusions cannot be drawn from all Sorts of Premises; there are eight general Rules which shew that a Conclusion cannot be very well drawn in a *Syllogism*, where they are not observed.

The first of these Rules is, That the intermediate Term cannot be taken twice particularly, but it must be taken at least once universally. For as it must unite and disunite the two Terms of the Conclusion, it is clear that it cannot do it, if it be taken for two different Parts of the same whole; because it would not be perhaps the same Part which shall be united or disunited from those two Terms. But being taken twice particularly, it may be taken for two different Parts of the same Whole; and consequently it would be impossible to conclude any Thing from it, at least necessarily. Which suffices to render an Argument vicious, since no *Syllogism* is called good, but that the Conclusion whereof cannot be false, the Premises being true. Thus in this Argument: Some Man is a Saint, some Man is a Thief, then some Thief is a Saint; the Word Man being taken for divers Parts of Men, cannot unite Thief with Saint, because it is not the same Man who is a Thief and a Saint.

The same cannot be said of the Subject and of the Attribute of the Conclusion; because though they be taken twice particularly, they can notwithstanding be united together, by uniting one of those Terms to the Intermediate, in the whole Extent of the Intermediate. For it follows hence very well, that if the Intermediate

be united in some of its Parts to some Part of the other Term, that first Term, which I have said to be joined to the whole Intermediate, will be found joined likewise with the Term wherewith some Part of the Intermediate is joined. If there are some *Englishmen* in each House of London, and there be some *Frenchmen* in some Houses of London, there are Houses where there is together an *Englishman* and a *Frenchman*.

*If some rich Men are Fools,
And that every rich Man is respected.
There are Fools respected.*

For those Rich who are Fools are also respected, since all rich Men are respected; and consequently in those Riches, Fools respected, the Qualities of Fool and Respected are joined together.

2. Rule.—*The Terms of the Conclusion cannot be taken more universally in the Conclusion than in the Premises:* Therefore when the one or the other is taken universally in the Conclusion, the Reasoning will be false, if it be taken particularly in the two first Propositions. The Reason of this is, that nothing can be concluded from the Particular to the General; because from that some Man is black, it cannot be concluded that all Men are black.

3. Rule.—*Nothing can be concluded from two negative Propositions:* Because two negative Propositions separate the Subject from the Intermediate, and the Attribute from the same Intermediate. But from that those two Things are separated from the same Thing, it does not follow that they are, or are not the same Thing. From that the *Spaniards* are not *Turks*, and that the *Turks* are not *Christians*, it does not follow that the *Spaniards* are not *Christians*; neither does it follow that the *Chinese* are *Christians*, though they be no more *Turks* than the *Spaniards*.

4. Rule.—*A negative Conclusion cannot be proved, by two affirmative Propositions:* For from that the two Terms of the Conclusion are united with a Third, it cannot be proved that they are disunited between themselves.

5. Rule.—*The Conclusion follows always the weaker Part, i. e. that if one of the two Propositions be negative, the Conclusion must be negative; and if one of them be particular the Conclusion must be particular.* The Proof of this is, that if there is a negative Proposition the Intermediate is disunited from one of the Parts of the Conclusion; and consequently incapable of uniting them, which is necessary to conclude affirmatively. And if there be one particular Proposition the Conclusion cannot be general. For if the Conclusion be general Affirmative, the Subject being universal, it must be likewise universal in the *Minor*; and consequently must be the Subject thereof, the Attribute being never taken generally in the affirmative Propositions: Therefore the Intermediate joined to that Subject, will be particular in the *Minor*, and general in the *Major*, otherwise it would be twice particular. Then it will be the Subject of the *Major*, and consequently that *Major* will be universal: And thus there can be no particular Proposition in an affirmative Argument, the Conclusion whereof is general.

This is still clearer in the Conclusion of universal Negatives: For it follows hence, that there must be three universal Terms in the two Premises; but as there must be in it an affirmative Proposition, according to the third Rule, the Attribute whereof is taken particularly, it follows that all the other three Terms are taken universally, and consequently the two Subjects of the two Propositions, which renders them universal, and which was to be demonstrated.

6. Rule. *Of two particular Propositions nothing is concluded.* For if they be both Affirmative, the Intermediate will be taken twice particularly, whether it be the Subject, or the Attribute. For by the first Rule, nothing is concluded, the Medium whereof is twice taken particularly. And if one of them was Negative, the Conclusion being so likewise (by the preceding Rule) there must be, at least, two universal Terms in the Premises; therefore there must be an universal Proposition in the two Premises, it being impossible to dispose so two Terms in two Propositions, where there must be two Terms taken universally, without making either two

negative Attributes, which would be against the third Rule, or some of the Subjects universal, which renders the Proposition universal.

As to the *Figures and Modes of Syllogisms in general.* After we have established the general Rules, which must be necessarily observed in all simple Syllogisms; it remains to see how many Sorts there are of those Syllogisms.—It must be said, in general, that there are as many Sorts of them, as there are Manners to dispose, in observing those Rules, the three Propositions of a Syllogism, and the three Terms whereof they are composed.

The Disposition of the three Propositions according to their four Differences A. E. I. O. is called *Mode*.—And the Disposition of the three Terms, i. e. of the intermediate with the two Terms of the Conclusion, is called *Figure*.

One may reckon how many concluding Modes there are, without considering the different Figures, according to which the same *Mode* can make various Syllogisms. For by the Doctrine of Combinations, four Terms, as A. E. I. O. being taken by three and three, cannot be differently disposed but into 64 Manners. But of those 64 different Manners, those who will take the Pains to consider every one of them apart, will find that 28 of them are excluded by the third and sixth Rule, that nothing is concluded from two Negatives and two Particulars.—18 by the fifth Rule, that the Conclusion follows the weaker Part.—6 by the fourth, that from two Affirmatives nothing can be concluded negatively.—And 2 others, which make up in all 57; and consequently there remain only 10 concluding Modes.

4 Affirmat.	{	A. A. A.	6 Negat.	{	E. A. E.
		A. I. I.			A. E. E.
		A. A. I.			E. A. O.
		I. A. I.			A. O. O.
					O. A. O.
					E. I. O.

Which notwithstanding there are more than ten Species of Syllogisms, since only one of these Modes, according to the other Manner, can make several Kinds thereof; whence the Diversity of Syllogisms is taken, which is the different Disposition of the three Terms, called *Figure*.

As for that Disposition of the three Terms, it relates but to the two first Propositions, because the Conclusion is supposed, before the Syllogism be made to prove it: And therefore as the Intermediate cannot be disposed but in four different Manners with the two Terms of the Conclusion, there can be but four Figures possible.

For either the Intermediate is *Subject in the Major, and Attribute in the Minor*; which makes the first Figure.

Or, is *Attribute in the Major and in the Minor*; which makes the second Figure.

Or, is *Subject in the one and in the other*; which makes the third Figure.

Or, lastly, is *Attribute in the Major, and Subject in the Minor*; which can make the fourth Figure: It being certain that one can sometimes conclude necessarily in that Manner, which suffices to make a true Syllogism.

As to the Rules, Modes, and Foundations of the first Figure.—We have observed already, that the first Figure is that where the Intermediate is Subject in the *Major*, and Attribute in the *Minor*.—This Figure has but two Rules.

The first Rule is, that *the Minor must be Affirmative*; for if it was Negative, the *Major* would be Affirmative, by the third general Rule, and the Conclusion Negative by the fifth: Therefore the greater Term would be taken universally in the Conclusion, because it would be Negative, and particularly in the *Major*, because it is the Attribute hereof in this Figure, and would be Affirmative, which is against the second Rule, which forbids to conclude from the Particular to the General. This Reason has Place likewise in the third Figure, where the greater Term is likewise the Attribute in the *Major*.

The second Rule is, that *the Major ought to be universal*; for the Minor being Affirmative by the preceding Rule, the Intermediate which is Attribute there is taken particularly; therefore it must be universal in the *Major* where it is Subject, which renders it universal: Otherwise it would be taken twice, particularly against the first general Rule.

in this Figure: For of the ten concluding Modes, A. E. E. and A. O. O. are included by the first Rule of this Figure, which is, that the Minor cannot be Negative. A. A. A. and E. A. E. are excluded by the second Rule, which is, that the Conclusion cannot be general. There remains then but these six Modes.

3 Affirm. $\left\{ \begin{array}{l} \text{A. A. I.} \\ \text{A. I. I.} \\ \text{I. A. I.} \end{array} \right.$ 3 Negat. $\left\{ \begin{array}{l} \text{E. A. O.} \\ \text{E. I. O.} \\ \text{O. A. O.} \end{array} \right.$

This has been reduced to the six following artificial Words, though in another Order.

DA- The Divisibility of the Matter, in infinitum, is incomprehensible.

RA- The Divisibility of the Matter, in infinitum, is very certain.

PTI- Then there are Things very certain, which are incomprehensible.

FE- No Man can forsake himself.

LA- All Men are Enemies to themselves.

PTON- Then there are Enemies who cannot be forsaken.

DI- There are Wicked in the greatest Fortunes.

SA- All the Wicked are miserable.

MIS- Then there are Miserable in the greatest Fortunes.

DU- All the Servants of God are Kings.

TI- There are Servants of God who are Poor.

SI- Then there are Poor who are Kings.

BO- There are Cholericks who are not blameable.

CAR- But Wrath is a Passion.

DO- Then there are Passions which are not blameable.

FE- No Folly is eloquent.

RI- But there are Follies in Figure.

SON- Then there are Figures which are not eloquent.

Note. That there are two Principles on which the Modes of the third Figure are founded. — The first pertains to the affirmative Modes, viz. If two Attributes agree to the same Subject, they likewise agree sometimes between themselves, v. gr. If all Mystery be obscure and certain, something certain is sometimes obscure. — The second Principle relates to the negative Modes, viz. If of two Attributes, one agree to some Subject, to which the other does not agree, those Attributes do not agree between themselves.

As to the Modes of the fourth Figure. — There are three Rules in this Figure.

The first Rule is; that the Major must be affirmative, and the Minor universal. Because the Intermediate, in this Figure, is taken particularly in the affirmative Major, whereof it is Attribute. Therefore by the fourth general Rule, it must be taken universally in the Minor, and render it universal, since it is the Subject thereof.

The second Rule; when the Minor is affirmative, the Conclusion must be particular. For the less Extrem, which is the Attribute of the Minor, is taken in it, particularly; therefore it must be taken, likewise, particularly in the Conclusion, whereof it is Subject; and consequently renders it particular.

The third Rule; when the Mode is negative, the Major must be general. Because the greater Term is taken universally in the negative Conclusion, whereof it is Attribute. Therefore that it may be taken likewise universally in the Major, whereof it is Subject, it renders it universal, as in the second Figure.

Major ubi affirmat, generalem sune minorem.

Si Minor affirmat, conclusio fit specialis.

Cumque negans modus est, Major generalis habetur.

Therefore there can be but five Modes in the fourth Figure, for of the ten concluding Modes, A. I. I. and A. O. O. are excluded by the first Rule; A. A. A. and E. A. E. by the second; O. A. O. by the third. Whence there remain only the five following.

2 Affirm. $\left\{ \begin{array}{l} \text{A. A. I.} \\ \text{I. A. I.} \end{array} \right.$ 3 Negat. $\left\{ \begin{array}{l} \text{A. E. E.} \\ \text{E. A. O.} \\ \text{E. I. O.} \end{array} \right.$

These five Modes can be included in the five artificial Words.

BAR- All the Miracles of Nature are common.

BA- All that's common make no Impression upon us.

RI- Then there are Things which make no Impression upon us, which are Miracles of Nature.

CA- All the Evils of this Life are transitory Evils.

LEN- All transitory Evils are not to be feared.

TES- Then none of the Evils which are to be feared, is an Evil of this Life.

DI- Some Fools speak true.

BA- Whoever speaks true deserves to be followed.

TIS- Then there are some who deserve to be followed, who notwithstanding are Fools.

FES- No Virtue is a natural Quality.

PA- All natural Qualities have God for Author.

MO- Then there are Qualities which have God for Author, which are not Virtues.

FRE- No unhappy Persons are contented.

SI- There are Persons contented who are Poor.

SAN- Then there are Poor who are not unhappy.

Note, That those five Modes are commonly expressed in this Manner; Baralipson, Calentes, Dabitis, Fapesmo, Frisefomorum; which proceeds from Aristotle not having made a separate Figure of these Modes, they have only been considered as indirect Modes of the first Figure; because it was pretended, that the Conclusion thereof was renversed, and the Attribute was its true Subject. Therefore those who have followed that Opinion, have placed for the first Proposition, that where the Subject of the Conclusion enters; and for Minor, that where the Attribute enters. And thus have given nine Modes to the first Figure, four Directs, and five Indirects, which they have included in the two following Verses:

Barbara, Celarent, Darii, Ferio: Baralipson,
Celantes, Dabitis, Fapesmo, Frisefomorum.

And for the two other Figures.

Cesare, Camestres, Festino, Baroco: Darapti,
Felapton, Disamis, Datisi, Bocardo, Ferison.

But as the Conclusion, being always supposed, since it is that which is to be proved; it cannot be properly said, that it is ever renversed; we have thought it more advantageous to take always for Major the Proposition where the Attribute of the Conclusion enters; which has obliged us, to place the Major first, to renverse those artificial Words. So that to retain them better, they may be included in the Verse,

Barbari, Calentes, Dibatis, Fispamo, Frisefom.

Note also, That from this I'll pass to the Explication of the Conjunctive Syllogism, and of its Species.

We have divided the Syllogism into simple and conjunctive. Next to the simple Syllogism, is the complex, viz. that whereof the Conclusion is complex. In this Sort of Syllogism, only some Part of the Subject, or of the Predicate of the Conclusion, is joined with the intermediate Term in one of the Premises; and the other Part with the same Intermediate, in the other Premise, v. g.

Money is a Thing unanimated;

But several Men are Slaves to Money;

Therefore several Men are Slaves to a Thing unanimated.

Where it appears that the Attribute of the Conclusion, are Slaves to a Thing unanimated, is divided in the Premises in such a Manner, that one Part thereof, viz. a Thing unanimated, is placed in the Major, and the other, viz. are Slaves, is found in the Minor.

The conjunctive Syllogism is that, the Major whereof is conjunctive or composed, and contains the whole Conclusion; and this is either conditional, or copulative, or disjunctive.

Conditional Syllogisms are those, where the Major is a conditional Proposition, which contains the whole Conclusion, as,

If there is a God, he must be beloved:

But there is a God;

Then he must be beloved.

The Major has two Parts; the first is called the Antecedent, if there is a God; the second the Consequent, he must be beloved.

This Syllogism can be of two Sorts, because of the same Major can be formed two Conclusions.

The first is, when having affirmed the Consequent in

the Major, the Antecedent is affirmed in the Minor, according to this Rule, in placing the Antecedent, the Consequent is placed, v. gr.

If the Matter cannot move itself, its first Motion must be from God.

But the Matter cannot move itself.

Then its first Motion must be from God.

The second Sort is, when the Consequent is taken off, to take off the Antecedent, according to this Rule, taking off the Consequent, the Antecedent is took off, v. gr.

If some of the Elect perish, God is deceived;

But God is not deceived;

Then none of the Elect perish.

This is the Reasoning of St. Augustin; *horum si quisquam perit, fallitur Deus; sed nemo eorum perit, quia non fallitur Deus.*

The conditional Arguments are vicious in two Manners. One is when the Major is an unreasonable Conditional, and whose Consequence is against the Rules; as if I was to conclude the general from the particular, saying, *If we deceive ourselves in something, we deceive ourselves in all Things.*

But that Falsity in the Major of those Syllogisms, regards rather the Matter thereof than the Form; therefore are not considered as vicious according to the Form, but when a bad Conclusion is drawn from the Major true or false, reasonable, or against Reason; which is done in two Manners:

The first, when the Antecedent is inferred from the Consequent; as if it was said,

If the Chinese are Mahometans, they are Infidels;

But they are Infidels;

Then they are Mahometans.

The second Sort of conditional Arguments, which are false, is when from the Negation of the Antecedent, the Negation of the Consequent is inferred; as in the same Example:

If the Chinese are Mahometans they are Infidels;

But they are not Mahometans;

Then they are not Infidels.

There are notwithstanding some of these conditional Arguments, which though they seem to have the second Imperfection, are very good; because there is an Exclusion understood in the Major, though not expressed: For Example; Cicero having published a Law against those who should buy the Suffrages, and Murena having been accused to have bought them; Cicero who pleaded for him, justifies himself by this Argument, of the Reproach Cato made of him, of acting in that Defence against his own Law: *Etenim si largitionem factum esse confiterer, idque rectè factum esse defenderem, facerem improbe, etiam si alius legem tulisset; cum vero nihil commissum contra legem esse defendam, quid est quod meam defensionem latio legis impediatur?* This Argument seems to be like to one of a Blasphemer, who should say to excuse himself; *If I was to deny the Existence of a God, I should be a Reprobate indeed; but though I blaspheme, I do not deny the Existence of a God; then I am not Reprobate.* This Argument would be nought, because there are other Crimes besides Atheism, which render a Man a Reprobate: But the Reason why that of Cicero is good, though Ramus has proposed it as an Example of a bad Reasoning, is, that it contains in the Sense an exclusive Particle; and it must be reduced to the following Terms.

It would be then only I could be reproached with Reason, of acting against my Law, if I was to confess that Murena had bought the Suffrages, and should notwithstanding justify his Action:

But I pretend that he has not bought the Suffrages:

And consequently I do nothing against my Law.

We call disjunctive Syllogisms, those the first Proposition whereof is disjunctive, i. e. the Parts whereof are joined by *vel*, or, as this of Cicero,

Those who have killed Cæsar, are Parricides, or Defenders of their Liberty;

But they are not Parricides;

Then they are Defenders of their Liberty.

There are two Sorts of these Arguments. — The first, when one Part is taken off, to keep the other, as in this last of Cicero; or in the following one.

All the Wicked must be punished in this World, or in the other;

But there are wicked Men who are not punished in this World;

Then they'll be punish'd in the other.

Sometimes there are three Members in this Sort of Syllogisms; and then two of them are taken off to keep one.

The second Sort, but less natural, is, when one of the Parts is taken, to take off the other.

These disjunctive Syllogisms are seldom false, but by the Falsity of the Major, in which the Division is not exact, there being found a Medium between the two opposite Members; as if I was to say,

One must obey Princes in what they command against the Law of God, or revolt against them;

But one must not obey them in what they command against the Law of God;

Then one must revolt against them.

Or, *One must not revolt against them;*

Then they are to be obeyed in what they command against the Law of God.

Both Reasonings are false, because there is a Medium in that Disjunction, which has been observed by the first Christians, which is to suffer any Thing rather than to act against the Law of God, without, notwithstanding, revolting against Princes.

These false Disjunctions are one of the most common Sources of Man's false Reasonings.

There is but one Sort of copulative Syllogisms, which is, when the Major is formed of a copulative Proposition, Part whereof is taken in the Minor, to take off the other in the Conclusion, &c.

A Man cannot serve at once God and Mammon;

But an avaricious Man serves Mammon;

Then he cannot serve God.

All these Sorts of Syllogisms, as well as the simple ones, are commonly divided into demonstrative, topical, and sophistical; though this Division regards rather Argumentation in general; than the Syllogism.

A demonstrative Syllogism is that which consists of Premises necessarily true, i. e. either evident of themselves, or already proved by other Propositions, from which a true Conclusion is necessarily deduced.

A topical or dialectical Syllogism, is a Syllogism consisting of probable Propositions, and producing only an Opinion. It is called topical, i. e. local, because taken from dialectical Places, of which I'll speak hereafter.

A sophistical Syllogism is a Syllogism consisting of false Propositions, though apparently true, and produces Error.

As to *Enthymema's*, and *Enthymematical Sentences*. — I have said already, that the Enthymema is a Syllogism perfect in the Mind, but imperfect in the Expression; because some of the Propositions are suppressed in it, as too clear, and too well known, and which can be easily supplied by the Mind of those to whom we speak. This Sort of Argument is so common in Discourses and Writings, that it is rare, on the contrary, that all the Propositions are expressed in them.

Therefore the *Enthymema's* are the most common Manner of expressing our Reasonings, in suppressing that Proposition we judge can be easily supplied; and that Proposition is sometimes the Major, sometimes the Minor, and sometimes the Conclusion; though that is not called then properly *Enthymema*, the whole Argument being contained in some Measure, in the two first Propositions.

It happens, sometimes, that the two Propositions of the *Enthymema* are included in one single Proposition, called for that Reason, by Aristotle, *Enthymematic Sentence*.

As to Syllogisms composed of more than three Propositions. — I have said already, that those Syllogisms are called *Sorites*.

There can be distinguished three Sorts of them. — 1. The *Gradations*, of which I have said enough already. — 2. The *Dilemma's*, of which I'll speak by and by. — 3. Those which the Greeks call *Epicheirema's*, which contain the Proof either of one of the two main Propositions.

Propositions; or of both, of which I am a going to speak.

As we are often obliged to suppress in the Discourse certain Propositions, because too clear; it is often necessary, when we advance some which are dubious, to join at the same Time, the Proofs to them, to prevent the Impatience of those to whom we speak, who are sometimes offended, when we endeavour to persuade them by Reasons which appear false or dubious to them; for though this Inconveniency be removed afterwards, it is, notwithstanding, dangerous to produce, even for a short Time, a Distaste in their Mind; and therefore it is far better that the Proofs should follow immediately those dubious Propositions, than to be separated from them. That Separation produces, besides, another Inconveniency much more incommodious; which is, that one is obliged to repeat the Proposition he wants to prove. Therefore, though the Method of the Schools be to propose the whole Argument, and afterwards to prove the Proposition which bears the Difficulty; that followed in the common Discourses, is to join to the dubious Propositions, the Proofs whereby they are established; which makes a Sort of Argument of several Propositions: For to the Major is joined the Proof of the Major, to the Minor the Proof of the Minor, and afterwards the Conclusion.

The whole Oration for *Milo*, can be thus reduced to a composed Argument, the Major whereof is, that it is lawful to kill one who sits in Ambuscade for us. The Proofs of that Major are taken from the natural Law, the Law of Nations, and Examples. The Minor is, that *Clodius* has set Ambuscades to *Milo*, and the Proofs of the Minor are the Equipage of *Clodius*, his Retinue, &c. the Conclusion is, that it was then lawful for *Milo* to kill *Clodius*.

As to *Dilemma's*. — A *Dilemma* can be defined a composed Reasoning, where after a Whole has been divided into its Parts, one concludes affirmatively or negatively of the Whole, what has been concluded of each Part.

I say, *what has been concluded of each Part*, and not only what should have been affirmed of it; for what we properly call *Dilemma*, is only when what we say of each Part is supported by its particular Reason.

For Example, having to prove *that none can be happy in this World*, it may be done by this *Dilemma*.

None can live in this World, without abandoning himself to his Passions, or refraining them;

If he abandons himself to his Passions, it is an unhappy State;

Because it is despicable, and one cannot be satisfied in it.

If he refrains them, it is also an unhappy State; because nothing is more troublesome, but that interior War, one is obliged to wage against oneself;

There can be then no true Happiness in this Life.

If one wants to prove, that the Bishops who do not work to the Salvation of the Souls committed to their Pastoral Sollicitude, are inexcusable before God, it may be done by a *Dilemma*.

They are either capable of their Employment, or they are incapable;

If they are capable, they are inexcusable for not employing themselves in it;

If they are incapable, they are inexcusable, for having accepted so important an Employment, which they cannot discharge;

And consequently, let the Case be what it will, they are inexcusable before God, if they do not work to the Salvation of the Souls committed to their Care.

But some Observations can be made on these Sorts of Reasonings.

The first is, that all the Propositions which enter into it are not always expressed. For Example, the *Dilemma* I have just now proposed, is contained in these few Words of an Harangue of *St. Charles*, at the Entrance of one of his provincial Synods: *Si tanto numeri impares, cur tam ambitiosi: si pares, cur tam negligentes?*

Thus there are several Things understood in that celebrated *Dilemma*, whereby an antient Philosopher proved, that one ought not to meddle with the Affairs of the Republick:

For if we behave well in them, we shall offend Men; if we behave ill, we shall offend the Gods; therefore

we are not to meddle with them.

And likewise in that whereby another proved, that one ought not to marry: *For if the Wife one marries be handsome, she causes Jealousy; if she is ugly, she displeases; therefore one ought not to marry.*

For in both these *Dilemma's*, the Proposition which ought to have contain'd the Partition, is understood; and which is very common; because it is easily understood, being sufficiently mark'd by the particular Propositions, where each Part is treated.

Besides, in order to have the Conclusion included in the Premises, something general must be understood every where, which may be agreeable to the whole, as in the first.

This Advice is very important to judge well of the Force of a *Dilemma*, for the Reason why, for Example, the first is not conclusive, is, that it is not forbidden to offend Men, when it cannot be avoided without offending God.

The second Observation is, that a *Dilemma* can have two principal Imperfections; one whereof is when the Disjunctive on which it is founded is imperfect, because it does comprize all the Members of the whole which is divided.

Thus the *Dilemma* not to marry, is not concluding; because there may be Wives not handsome enough to cause Jealousy, nor ugly to displease.

For the same Reason, the *Dilemma* used by the antient Philosophers, to prove that Death was not to be feared, was a very bad one. *Either our Soul, said they, perishes with the Body, and thus being no longer sensible, we will be incapable of Pain; or if the Soul outlives the Body, it will be happier than it was while in the Body; therefore Death is not to be feared.* For as *Montagne* has very well observed, it was a great Blindness not to see that a third State could be conceived between those two, which is, that the Soul remaining after Death, would find itself in a State of Torment or Misery; which is a just Subject to fear Death.

The other Imperfection, which hinders the *Dilemma's* from concluding is, when the particular Conclusions of each Part are not necessary. Therefore it is not necessary a handsome Woman should cause Jealousy, since she can be so modest and virtuous, as to give no Occasion for mistrusting her Fidelity. Neither is it necessary that being ugly she should displease her Husband, because she can have a beautiful Mind capable to gain his Love.

The third Observation is, that he who makes use of a *Dilemma*, must take Care it should not be turn'd against him. Thus *Aristotle* witnesses, that the *Dilemma* used by the Philosopher above-mentioned, to prove that one ought not to meddle with the Affairs of the Republick, was return'd against him; for it was said to him:

If one does not govern oneself according to the corrupted Rules of Men, they will be satisfied.

If one observes the Rules of true Justice, the Gods will be pleased.

Therefore we ought to meddle with the Affairs of the Republick.

Though this Return is not reasonable, for it is not advantageous to offend God in obliging Men.

As to the finding out the Medium, or dialectical Places. — What Logicians and Rhetoricians call Places, *loci Argumentarum*, are certain general Chiefs, to which may be referred all the Proofs used in the divers Matters treated of; and that Part of Logic, called *Invention*, is nothing else but what they teach of those Places.

Ramus quarrels on that Subject with *Aristotle*, and the other scholastick Philosophers, because they treat of Places, after they have given Rules of Argumentation, and pretends against them, that the Places must be explained before the Rules are given.

The Reason of *Ramus* is, that the Matter must have been found before one thinks of disposing it; but the Explication of the Places teaches how to find that Matter, whereas the Rules of the Argument cannot teach but the Disposition thereof.

But this Reason of *Ramus* is very weak, because tho' it be necessary that the Matter should be found to dispose it; it is not necessary notwithstanding, to learn how to find that Matter before one has learned to dispose it: For to learn how to dispose the Matter, it suffices to have certain general Matters to serve of Examples; but th:

the Mind and common Sense furnish always enough of it, without it being necessary to borrow it from any Art or Method: Therefore it is true that one should have a Matter to apply the Rules of the Arguments to it; but it is false that it is necessary to find that Matter by the Method of the *Places*.

It could be said on the contrary, that it is pretended to teach in the *Places* the Art of drawing Arguments and Syllogisms, therefore it is necessary to know, previously to it, what is Argument and Syllogism: But it could be perhaps answered likewise, that Nature alone furnishes a general Knowledge of Reasoning, which suffices to understand what is said of it in speaking of the *Places*.

Therefore it is almost needless to know in what Order one must treat of *Places*, since it would be perhaps more useful to examine, if one should not rather not at all treat of them. We know that the Antients have made a great Mystery of that Method; and that *Cicero* preferred it to the whole *Dialectic*, such as it was taught by the *Stoicians*, because they made no mention of the *Places*: *Quintillian* and all the other Rhetoricians, *Aristotle* and all the Philosophers, speak of it in the same Manner; so that one would be of their Sentiment, if the general Experience was not as posed to it.

We can call to witness it almost as many Persons as there are who have passed through the ordinary Course of Philosophy, and have learned of that artificial Method to find Proofs, what is learned of it in the Schools. For I really believe that none of them can truly say, that when he has been obliged to treat of some Subject, he has reflected on those *Places*, and searched among them the Reasons he wanted.

But as several celebrated Persons have spoke of those *Places*, that thereby they have made it an almost indispensable Necessity to speak of them, we must do it (to render our *Logic* entire and perfect) in as concise a Manner as possible: Therefore,

The *Dialectical Places* are taken either from the *Grammar*, or *Logic*, or *Metaphysick*. Whence some are *grammatical*, some *logical*, and some *metaphysical*.

Grammatical Places, are the *Etymology* and *Places* derived from the same Roots, called in Latin *conjugata*.

The Argument by *Etymology*, is when one says, for Example, he never diverts himself, properly speaking, because to divert oneself, is to desist from serious Occupations.

The *Words derived from the same Roots*, serve likewise to find Thoughts. *Who is more worthy of Compassion than an illustrious unhappy? and who is more unworthy of Compassion than a proud Beggar?*

The *Places of Logic*, are the universal Terms, *Gender*, *Species*, *Difference*, *Proper*, *Accident*, *Definition*, and *Division*. But as all these Points have been already explained, it is not necessary to treat any more of them. It is only to be observed, that commonly certain Maxims are joined to those Terms, which it is not improper to know; not because they are very useful, but because they are common: Those Maxims are as follow.

1. What is affirmed or denied of the Gender, is affirmed or denied of the Species, viz. *what is agreeable to Men is also agreeable to the Great; but they cannot pretend to Advantages above human Nature*. This is the Foundation of the affirmative Argument of the first Figure.

2. In destroying the Gender the Species is destroyed likewise, v. g. *He who does not judge at all, does not judge ill; he who does not speak at all, does not speak indiscreetly*.

3. In destroying all the Species the Gender is destroyed, v. g. *The Forms called substantial (the rational Soul excepted) are neither Body nor Spirit; therefore they are not Substances*.

4. If the total Difference can be affirmed or denied of something, the Species thereof can be affirmed or denied, v. g. *Extension doth not belong to the Thought, therefore it is not a Matter*.

5. If the Property of something can be affirmed or denied, the Species thereof can be affirmed or denied, v. g. *It being impossible to represent to oneself half of a Thought, or a Thought round or square, it is impossible it should be a Body*.

6. *The defined is affirmed or denied*, v. g. *There are few Persons just, because there are few of them who have*

a firm and constant Will to return to every one what belongs to him.

The *metaphysical Places*, are certain general Terms agreeable to all Sorts of Beings, to which several Arguments are referred, as the Causes, Effects, the Whole, the Parts, and opposite Terms. The most useful is to know some general Divisions thereof, and particularly of the Causes.

The Definitions given in the School to Causes in general, by saying that *a Cause is what produces an Effect, or whereby a Thing is*, are so obscure, that they had been as well left among the Things which are not defined; the Idea we have of them being as clear as the Definitions.

But the Division of Causes into four Species, which are the *final*, *efficient*, *material*, and *formal Cause*, is so famous, that we should know it.

The End for which a Thing is, we call a *final Cause*.

There are *principal Ends*, which are those which are chiefly considered; and *accessary Ends*, which are only considered by Addition.

What one pretends to do, or to obtain, is called *finis cuius gratia*. Thus Health is the End of Medicine, because Medicine pretends to procure Health. That for which one works is called *finis cui*, Man is the End of Physick in that Manner.

Nothing is more common than to draw Arguments from the End, either to shew that a Thing is imperfect, as that a Discourse is ill made, when it is not proper to persuade; or to shew that it is very likely a Man has done or will do an Action, because it is conformable to the End he commonly proposes to himself. Whence this famous Sentence of a Judge of Rome, that one ought to examine before all Things, *cui bono*, i. e. what Interest a Man should have had to do a Thing, because Men act commonly according to their Interest; or to shew on the contrary, that a Man ought not to be suspected of an Action, because it had been contrary to the End thereof.

There are besides several other Manners of reasoning by the End, which a good Sense will sooner discover than all the Precepts.

The *efficient Cause* is that which produces another Thing; Arguments are drawn from it, by shewing that an Effect is not, because there was no sufficient Cause; or that it is or will be, in shewing that all its Causes are. If those Causes are necessary, the Argument is necessary; if they are free and contingent, it is only probable. There are divers Species of *efficient Cause*, which it is needless to mention.

God in creating *Adam* was his *total Cause*, because nothing concurred with him; but the Father and Mother are each but *partial Causes* of their Child, because they want one another's Assistance.

The Sun is the *proper Cause* of the Light, but he is only the accidental Cause of the Death of a Man, killed by his excessive Heat, because he was ill disposed.

The Father is the *nearer Cause* of his Son.

The Grandfather is but a *distant Cause*.

The Mother is a *productive Cause*.

The Nurse is but a *preservative Cause*.

The Father is an *universal Cause* with respect to his Children, because they are like him in Nature.

God is but an *equivocal Cause* with regard to the Creatures, because they are not of God's Nature.

A Workman is the *principal Cause* of his Work, and his Tools are but the *instrumental Cause* thereof.

The Air which enters into Organs, is an *universal Cause* of the Harmony of the Organs.

The particular Disposition of each Pipe, and the Organist are the *particular Causes* thereof, which determine the universal.

The Sun is a *natural Cause*.

Man is an *intellectual Cause*, with regard to what he does with Judgment.

The Fire which burns the Wood or Coals is a *necessary Cause*.

A Man that walks is a *free Cause*.

The Sun lighting a Room is the *proper Cause* of its Light, the Aperture of the Window is but one Cause or Condition, without which that Effect could not be, *conditio sine qua non*.

The Fire burning a House is the *physical Cause* of that Effect; and the Person who has set the House on Fire is the *moral Cause* thereof.

To the *efficient Cause* is referred the *exemplary Cause*, which is the Model we propose to ourselves in doing some Work, as the Design of a Building whereby the Architect guides himself, or generally what is the Cause of the objective Being of our Idea.

The *material Cause* is that whereof Things are formed, as Gold is the Matter of a golden Vessel. What is agreeable or not agreeable to the Matter, is agreeable or not agreeable to the Things which are composed of it.

The Form is what renders a Thing such as it is, and distinguishes it from others; whether it be a Being distinguished from the Matter, or only the Disposition of the Parts: It is by the Knowledge of that Form the Properties thereof are to be explained.

There are as many different Effects as there are Causes, the Words being reciprocal: The common Manner to draw Arguments from them, is to shew that if the Effect be, the Cause is, since nothing can be without a Cause. We also prove a Cause to be good or bad, when the Effects thereof are good or bad; which is not always true in Causes by Accident.

There are four Sorts of *opposite Terms*, the *relative*, as Father, Son; Master, Servant: The *contrary*, as Cold, Heat; Healthy, Sick: The *privative*, as Life, Death; Sight, Blindness; Hearing, Deafness; Knowledge, Ignorance: The *contradictory*, which consist in a Term, and in the simple Negation of that Term, *to see, to not see*. The Difference between these two last Sorts of *Opposites*, is, that the *privative Terms* include the Negation of a Form in a Subject, which is susceptible thereof; whereas the *Negatives* do not mark that Capacity: Therefore we do not say of a Stone, that it is blind or dead, because it is capable neither of Sight nor of Life.

As those Terms are opposite we make use of one to deny the other. The *contradictory Terms* have this Property, that in taking off one the other is established.

There are several Sorts of *Comparisons*; for we compare Things either equal or unequal, semblable or dissemblable: We prove that what is agreeable or not agreeable to a Thing equal or semblable; is convenient or not convenient to another Thing to which it is equal or semblable, &c.

This is succinctly what is said of *dialectical Places*.

As to the *Fallacy of Sophisms*. Though when one knows the Rules of good Reasoning, it is not difficult to discover those which are bad, notwithstanding as the Examples to be avoided make often a greater Impression on our Mind than those to be imitated, it will not be needless to represent the principal Sources of bad Reasoning, called *Sophisms* or *Paralogisms*, because that gives still a greater Facility to avoid them.

I'll reduce them all to seven or eight, since some of them are so ridiculously palpable, that they do not deserve our Attention.

The first is, *to prove another Thing than what is in Question*. This is very common in Men's Contestations: They dispute with Heat, without often understanding one another. *Passion*, or Want of Probity, makes that one attributes to his Adversary, what is often very far from his Sentiment, to have Occasion hence to fight him with more Advantage, or imputes to him the Consequences he imagines he can draw from his Doctrine, though at the same Time he denies them. All this can be referred to the first Species of *Sophism*, which a sincere and honest Man must avoid above all Things.

The second is, *to suppose for true what is in Question*. This is what *Aristotle* calls *Petition of Principle*, and which we see clearly enough, to be contrary to true Reason; because in all Reasoning what serves for Proof must be clearer and better known than what is to be proved.

Notwithstanding which *Aristotle* is accused by *Galileo*, and with Justice, to have himself been guilty of that Imperfection, when he wanted to prove by the following Argument, that the Earth is placed in the Center of the World.

The Nature of ponderous Things is to tend towards the Center of the World, and of light Things to depart from it.

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But Experience shews us, that ponderous Things tend towards the Center of the Earth, and light Things depart from it.

Therefore the Center of the Earth is the Center of the World.

It is clear, that there is in the Major of this Argument a manifest *Petition of Principle*; for we see very well, that ponderous Things tend towards the Center of the Earth: But whence has *Aristotle* took, that they tend towards the Center of the World? unless he supposes that the Center of the Earth is the same with the Center of the World; which is the very Conclusion he will prove by that Argument.

The third is, *to take for a Cause which is not a Cause*. This Sophism is very common among Men, and they fall into it in several Manners: One is by the simple Ignorance of the true Causes of Things. Thus Philosophers have attributed a thousand Effects to the Fear of the Vacuum, which has been proved demonstratively by very ingenious Experiences to have for Cause but the Ponderosity of the Air.

The other Cause which makes Man fall into this Sort of Sophism, is our extravagant Vanity, which hinders us from acknowledging our Ignorance, chusing rather to forge imaginary Causes of the Things we are desired to account for, than to confess that we do not know the Cause thereof.

The fourth is, *an imperfect Enumeration*. As if any Body was to say, *Titius is condemned to die, or by his own Fault, or by the Partiality of the Judges*; this Enumeration would be imperfect, for it could happen likewise, that *Titius* is condemned to die, or by want of Probity in the Witnesses, or some Mistakes in his Defence, or the like.

The fifth is, *to judge of a Cause by what belongs to it but by Accident*. As if some body would exclude *Antimony* from among Remedies, because having been sometimes unskilfully administered, it has produced bad Effects. Men fall often into this bad Sort of Reasoning, when they take simple Occasions for true Causes; as he who should accuse the Christian Religion with having been the Cause of the Massacre of an infinite Number of Persons, who rather chose to die than to renounce *Jesus Christ*; whereas those Murders are to be attributed neither to the Christian Religion, nor the Constancy of Martyrs, but to the sole Injustice and Cruelty of the Pagans.

The sixth is, *to pass from a divided Sense to a composite Sense, and from a composite Sense to a divided Sense*.

One of these Sophisms is called *fallacia compositionis*, and the other *fallacia divisionis*. It is what will be easier understood by Examples.

Jesus Christ says in the Gospel, speaking of his Miracles, the Blind see, the Lame walk upright, &c. This cannot be true, but in taking these Things separately and not jointly, *i. e.* in a divided, not in a composite Sense: For the Blind could not see in remaining blind, nor the Deaf hear by remaining deaf; but those who had been blind before were no more blind, but could see; and likewise of the Deaf.

It is likewise said in the same Sense in the Scripture, that God justifies the Impious; for this cannot be said that he accounts for just, those who are impious still, but that he renders just by his Grace those who were impious before.

There are on the contrary Propositions which are not true, but in a Sense opposite to that which is a divided Sense: As when *St. Paul* says, that the Calumniators, Fornicators, Avaricious, shall not enter into the Kingdom of Heaven: For this does not signify that none of those who have been guilty of those Vices will be saved, but only that those who will not renounce them by a sincere Repentance, and their Conversion to God, shall have no Part in the Kingdom of Heaven.

It is easy to see that one cannot pass without a Sophism from one of those Senses to the other.

The seventh is, *to pass from what is true in some Respect, to what is simply true*. This is called in the Schools, *a dicto secundum quid ad dictum simpliciter*; of which I'll give the following Examples.

The *Epicureans* wanted to prove, that the Gods should have a human Form, because there was no handsomer than that, and that all that's handsome must be in God,

God; which was a very bad Reason. For the human Form is not absolutely a Beauty, but only with regard to the Bodies; and therefore it being a Perfection, but in some respect and not simply, it does not follow hence that it must be in God, because all Perfections are in God; none but those which are simple Perfections, *i. e.* which include no Imperfections being necessarily in God.

We see likewise in *Cicero, lib. 3. de nat. Deor.* a ridiculous Argument of *Cotta* against God's Existence, which can be reported to the same Imperfection. *How can we conceive God,* says he, *since no Virtue can be attributed to him? for shall we say that he has Prudence? But Prudence consisting in the Choice of Good and Evil; how can God want that Choice, since he is capable of no Evil? Shall we say that he is intelligent and reasonable? But Reason and Intelligence serve us to discover what is unknown to us, by what is known to us; but nothing can be unknown to God: neither can Justice be in God, since it only regards the human Society; nor Temperance, because he has no Volupties to moderate; nor Force, because he is susceptible neither of Pain nor of Toil, and is exposed to no Danger; how could then that be a God, who would have neither Intelligence nor Virtue?*

Nothing is more impertinent than this Manner of Reasoning; it is like the Thought of a Person, who having never seen but Houses covered with Straw, and having heard said that there was no Straw in the Cities, should conclude that there are no Houses in the Cities, and that the Inhabitants of those Places are very unhappy, being exposed to all the Injuries of the Air.

The eighth is, *to abuse the Ambiguity of the Words.* To this Sort of *Sophism* can be referred all the Syllogisms which are vicious for having four Terms; either because the Medium is taken twice particularly, or because it is taken in one Sense in the first Proposition, and in another Sense in the second; or, lastly, because the Terms of the Conclusion are not taken in the same Sense in the Premises, as in the Conclusion. For we do not restrain the Word *Ambiguity* to the single Words which are coarsely equivocal, which very seldom deceive, but conceive thereby all that can make a Word change Sense; especially when all Men cannot easily perceive that Change, because diverse Things being signified by the same Sound, they take them for the same Thing.—I'll produce here some Examples of that *Ambiguity*, which often deceives very learned Men.

Such is that found in the Words which signify a *Whole*, which can be taken collectively for all its Parts together, or distributively for each of its Parts. It is whereby this *Sophism* of the *Stoicians* is to be resolved, who concluded that the World was an Animal endued with Reason; *because what has the Use of Reason, is better than that which has not that Use; but nothing is better, said they, than the World; therefore the World has the Use of Reason.* The Minor of this Argument is false, because they attributed to the World what only belongs to God; which is to be such, that nothing can be conceived better and more perfect. But in confining ones self in the Creatures, though it can be said that nothing is better than the World, taken collectively for the Universality of all the Beings God has created, all that can be concluded from it is, that the World has the Use of Reason according to some of its Parts, such as the Angels and Men, but not that altogether he is an Animal which has the Use of Reason.

The ninth is, *to draw a general Conclusion from a defective Induction.* We call *Induction* when the Research of several particular Things leads us to the Knowledge of a general Truth; thus when it has been tried on several Seas that the Water thereof is salt, and on several Rivers that their Water is fresh, it is generally concluded that the Water of the Sea is salt, and that of the Rivers fresh. The different Experiments which have been made that Gold does not diminish in the Fire, has made us judge that that is true of all Sorts of Gold; and as no People have been found which do not speak, we certainly believe that all Men speak, *i. e.* make use of Sounds which signify their Thoughts.

It is even whereby all our Knowledge begins; because the Things singular offer themselves to us, before the universal; though, afterwards the Universal serve to know the Singular.

But it is true, notwithstanding, that the *Induction* alone, is never a certain Means to acquire a perfect Knowledge; the Consideration of Things singular serving only of Occasion to our Mind to reflect on its natural Ideas, according to which it judges of the Truth of Things in general; for it is true, for Example, that perhaps I had never thought of considering the Nature of a Triangle, if I had never seen one, which has given me Occasion to think of it.

Note, That it remains yet to explain the fourth and last Part of *Logic*, which is *Method*; and is without doubt one of the most useful and most important Parts of this Treatise, since we cannot proceed to the Investigation of Truth, without some Order, which we learn from the *Method*; therefore,

THE FOURTH PART.

Of the Method.

METHOD, in general is, *the Art of disposing well a Sequel of several Thoughts, either to discover the Truth while yet hidden, or to prove it to others when we have discovered it.*

Therefore there are two Sorts of *Methods*, one to discover the Truth, called *Analysis* or *Method of Resolution*, which can also be called *Method of Invention*; and the other, to make it be understood by others when we have found it, called *Synthesis*, or *Method of Composition*, and which can also be called *Method of Doctrine*.

The whole Body of a Science is not commonly treated by *Analysis*, which is used only to resolve some Question.

All *Questions* are either of Words, or of Things.

I call here *Questions* of Words, not those where one searches Words, but those where by the Words the Things are searched, as those where it is a Question to find the Sense of an Enigma, or to explain what an Author wanted to say by obscure and ambiguous Words.

Questions of Things can be reduced to four principal Kinds.

The *first* is, when Causes are searched by the Effects; to know, for Example, the various Effects of the Magnet, search the Cause thereof; to know the various Effects commonly attributed to the *Vacuum*; search if it be the true Cause thereof, and we have found not.

The *second* is, when the Effects are searched by the Causes: We know, for Example, that Wind and Water have a great Force to move Bodies, but the Antients having not carefully enough examined which could be the Effects of those Causes, had not applied them, as it has been done since, by means of Mills, to a great Number of Things very useful to human Society, and which was the Fruit of the true Physick: So that it can be said, that the first Sort of Questions, where Causes are searched by the Effects, make the whole Speculation of the Physick; and that the second Sort, where the Effects are searched by the Causes, makes the whole Practice thereof.

The *third* Species of Questions is, when the whole is searched by the Parts; as when having several Numbers the Sum is searched by Addition; or having two, the Product is searched by Multiplication.

The *fourth* is, when having the whole or some Part thereof, another Part is searched; as when having a Number, and what is to be taken from it, what shall remain is searched.

But it must be observed, that to extend further these two last Sorts of Questions, and that they may comprize what could not be properly reported to the two former, the Word *Part* must be taken generally, for all that one Thing contains, its Modes, Extremes, Accidents, Properties, and generally all its Attributes.

But of what Nature may be the Question proposed to be resolved, the first Thing to be done, is to conceive clearly and distinctly what is to be asked, *i. e.* which is the precise Point of the Question: For there must be avoided what happens to several Persons, who by a Precipitation of Mind, apply themselves to resolve what is proposed to them, before they have considered by the Signs and Marks, whereby they could discover what they search, when they'll find it; as if a Servant to whom his Master

had commended to find out one of his Friends, should make Haste to go in quest of him, before he has learned more particularly of his Master who is that Friend.

Though in all Questions there is something unknown, otherwise there would be nothing to search; it is notwithstanding necessary, that even that which is unknown be marked and designed by certain Conditions, which determine us to search one Thing rather than another, and can make us judge when we have found it, that it is what we searched; and these Conditions must be considered first, taking Care to not add some which are not included in what is proposed; and to not omit those which are included in it; for one can err in both these Manners.

One would err in the first Manner, if when, for Example, we are asked, which is the Animal which in the Morning walks on all four, at Noon on two Feet, and in the Evening on three, we were to think ourselves confined to take all these Words of Feet, of Morning, of Noon, of Evening, in their proper and natural Signification; for he who proposes that *Enigma* has not put for a Condition, that they should be taken in that Manner; but it suffices that these Words cannot by a Metaphor be reported to any Thing else, and thus that Question is very well resolved, when it is answered, that that Animal is a Man.

Suppose besides, we be asked, by what Artifice the Figure of a Tantalus could have been made, who lying on a Column in the Middle of a Vessel, in the Posture of a Man who leans to drink, could never do it, because the Water could very well ascend into the Vessel as far as his Mouth, but did fly entirely, without the last Drop of it remained in the Vessel, as soon as it had arrived as far as his Lips; one would err in adding Conditions, which would be of no Service to the Solution of that Question, if one would amuse himself to search some marvellous Secret in that Figure of that Tantalus, which would make the Water fly as soon as it had touched his Lips, for that is not included in the Question, which if it be very well understood, must be reduced to these Terms, to make a Vase to contain the Water, which cannot be full but to a certain Height, and let it all run out, if it be filled more, which is very easy; for there wants nothing else but to hide a Syphon in the Column, with a small Hole at the Bottom, thro' which the Water enters, and the longest Leg thereof must have its Aperture under the Foot of the Vessel, till the Water which will be put in the Vessel, being arrived at the Top of the Syphon, it will remain in the Vessel, but when arrived to it, it will all run in the longest Leg of the Syphon, which is opened under the Foot of the Vessel.

The other Manner one errs in the Examen of the Conditions he searches, is when some are omitted which are essential to the Question proposed.

When then all the Conditions which design and mark what is unknown in the Question have been carefully examined; what is known must be examined likewise, because it is whereby one comes to the Knowledge of what is unknown. For we must not imagine that we are to find another Gender of Being, since our natural Light extends no further, than to discover that what we search participates in such and such a Manner of the Nature of the Things we know: If a Man, for Example, was born blind, it would be in vain to search Arguments and Proofs to make him have true Ideas of the Colours such as we have them by our Senses. Likewise if the Magnet or other Bodies, the Nature whereof we search with so much Curiosity, was a new Gender of Beings, and such as our Mind had never conceived the like, we should not expect of ever knowing it by our Reasoning, but should want for that Purpose another Mind: Therefore we must believe to have found all that can be found by the human Mind, if we can conceive distinctly such a Mixture of the Beings and Natures which are known to us, that it produces all the Effects we see in the Magnet.

But it is of the Attention made to what is known in the Question to be resolved, that the Analysis chiefly consists, the whole Art being to draw from that Examen great many Truths capable to lead us to the Knowledge of what we search.

This is what we call *Analysis* or *Resolution*, where it should be observed, 1. That in it, as well as in the Me-

thod called of *Composition*, we must always pass from the better known to the less known, because there is no true Method which can be exempted from this Rule.

2. But that it differs from that of *Composition*, in that those known Truths are taken in the particular Examen of the Thing we propose to know, and not in the more general Things, as it is done in the Method of Doctrine.

3. The clear and evident Maxims are proposed but as they are wanted, whereas in the other they are established first.

This is what can be said in general of the Analysis, which consists more in the Judgment, and in the Dexterity of the Mind than in particular Rules.

The *Method of Composition*, is chiefly to begin by the more general and simple Things, to pass to the less general and more composed, whereby all Reperitions are avoided; since if the Species were treated before the Gender, as it is impossible to know very well a Species without knowing the Gender thereof, the Nature of the Gender should be explained several Times in the Explication of each Species.

Several Things besides are to be observed, to render this Method perfect, and entirely proper for the End proposed by it; which is to acquire a clear and distinct Knowledge of the Truth; but because general Precepts are more difficult to be understood, when separated from all Kind of Matter, we'll consider the Method followed by Geometers, as that which has been judged the most proper, to persuade the Truth and convince the Mind; shewing particularly in what it is good; and in what it can be defectuous.

It being the End of Geometers to advance nothing but what is convincing, they thought they could obtain that End by observing three Things in general.

The first is, *to leave no Ambiguity in the Terms*, to which they have provided by the Definitions of the Words.

The second, *to establish their Reasonings but on two clear and evident Principles*, which could not be disputed by any Person of Sense: Therefore before all Things they place the Axioms they ask to be granted to them, as being so clear, that they could not be proved without reading them obscure.

The third, *to prove demonstratively all the Conclusions they advance*, by making use but of the Definitions they have given of the Principles which have been granted to them as very evident, or of the Propositions they have already extracted from them by Strength of Reasoning, and which become afterwards as so many Principles to them.

Therefore all that Geometers observe to convince the Mind, can be reduced to those three Chiefs, and included in the five following important Rules.

Necessary Rules for the Definitions. 1. *To leave no Term, either obscure or equivocal*, without defining it. 2. *To employ no other Terms in the Definitions, but those perfectly known and already explained.*

For the *Axioms.* 3. *To ask nothing else in Axioms but Things perfectly evident.*

For the *Demonstrations.* 4. *To prove all the Propositions a little obscure, employing only in their Proof, either the Definitions which have preceded, or the Axioms which have been granted, or the Propositions which have already been demonstrated, or the Construction of the Thing itself in Question, when there will be no Operation to be made.* 5. *To never abuse of the Equivocation of the Terms, in missing to substitute mentally the Definition which restrains and explains them.*

This is what Geometers have judged necessary to render the Proofs convincing and invincible: And if it must be confessed, that the Attention to observe those Rules is sufficient, to avoid making false Reasonings, in treating of Sciences, which without doubt is the Principal, since all the rest can be said useful rather than necessary.

As to a more particular Explication of those Rules; and first of those which regard the Definitions. Though I have spoke already in the first Part of the Utility of the Definitions of the Terms; this is notwithstanding so important, that one cannot have it too much in the Mind; since thereby are unfolded several Disputes which have often no other Object but the Ambiguity of the Terms, which

which one takes in one Sense, and the other in another, so that very great Contestations would cease in an instant, if one or the other of the Disputants, should take Care to mark clearly and concisely what he understood by the Terms, which are the Subject of the Dispute.

Cicero has observed that most of the Disputes between the antient Philosophers, and particularly between the *Stoicians* and *Academicians*, were founded only on that Ambiguity of Words, the *Stoicians* having took Pleasure to raise themselves, to take the Terms of the Moral in Sins, different from that of the other Philosophers; which made believe that their Moral was much more severe and perfect, though in fact that pretended Perfection consisted in Words only, and not in the Things.

Therefore it is a very useful Advice to retrench from all Disputes, all that is only founded on the Equivocation of the Words, in defining them by other Terms so clear, that one cannot be mistaken in them. To this the first of the Rules abovementioned is of a great Utility, viz. *to leave no Term, let it be ever so little obscure or equivocal, without being defined.* But to render those Definitions as useful as can be, the second Rule must be added to the first, viz. *to employ no other Terms in the Definitions but those perfectly known, or already explained,* i. e. Terms only which design, as clearly as possible, the Idea to be signified by the Word defined.

For when the Idea has not been clearly and distinctly enough designed, it is almost impossible, that in the Sequel, one should not pass insensibly to another Idea than that designed, i. e. that instead of substituting mentally each Time the Word, the same Idea one had designed, another is substituted which Nature furnishes us with; which is easily discovered in substituting expressly the Definition to the Defined: For that must change nothing in the Proposition, if one has always remained in the same Idea; whereas a Change will happen if one has deviated from it. All this will be easier understood by some Examples.

Euclid defines the Angle Plane rectiline, *the Meeting of two right Lines inclined on the same Plane.* If we consider this Definition as a simple Definition of the Word, so as to consider the Word *angle* as divested of all Signification, to have no other but the meeting of the two Lines, there's no Fault to be found in it, for *Euclid* was permitted to call of the Word *Angle* the Meeting of the two Lines: But he has been obliged to remember it, and to take no more the Word *Angle* but in that Sense. But to judge if he has done it, there's no need but to substitute, every Time he speaks of *Angle*, to the Word *Angle*, the Definition he has given to it; and if in substituting that Definition some Absurdity is found in what he says of the Angle, it will follow hence that he has not remained in the same Idea he had designed, but that he has passed insensibly to another, which is that of Nature. He teaches, for Example, to divide an Angle in two: By substituting his Definition it is easily seen, that it is not the Meeting of the two Lines which is divided into two, that it is not the Meeting of two Lines which has Sides and a Base; but all that belongs to the Space contained between the Lines, and not the Meeting of the Lines.

It is visible that what has embarrassed *Euclid*, and hindered him from designing the Angle by the Word of Space comprized between two Lines that meet, is, that he has seen that that Space could be greater or smaller, when the Sides of the Angle are longer or shorter; but he should not have concluded hence that the Angle rectiline was not a Space, but that it was only a Space comprized in two right Lines which meet, indeterminate according to that of those two Dimensions which answers to the Length of those Lines, and determinate according to the other by the proportional Part of a Circumference which has for Center the Point where those Lines meet.

As to the Rules which regard the Axioms, i. e. the Propositions clear and evident by themselves. Every body agrees that there are Propositions so clear and evident of themselves, that they have no need of Demonstration; and that all those which are not demonstrated must be such, to be Principles of a true Demonstration. For if they are ever so little uncertain, it is clear that they cannot be the Foundation of a Conclusion entirely certain.

But several do not conceive enough in what consists that Evidence of a Proposition. For, first, one must not imagine that a Proposition is never clear and certain, but when it is contradicted by no Body; and that it must pass for dubious, or at least one is obliged to prove it, when some Body denies it. If such a Thing was, there would be nothing certain and clear; since there have been Philosophers who have professed to doubt generally of all Things. Therefore it is not by Men's Contestations that we are to judge of Certainty, or Evidence; since there is nothing but what may be contested, especially by Word: But we must take for clear what appears such to all those who will take the Trouble to consider Things with Attention, and are sincere to say what they think. Therefore *Aristotle* says, with a great deal of Sense, that the Demonstration regards properly the interior Discourse, and not the exterior; because there is nothing so well demonstrated, but what can be denied by an obstinate Person, who will dispute even on Things of which he is persuaded inwardly, which is a very bad Disposition, and very unworthy of a generous Mind; though this Humour is often either cultivated, or taken in the Schools of Philosophy, by the Custom introduced in them of disputing of every Thing, so far as to think one's Honour engaged in never surrendering, that being esteemed the greater Genius who is quickest in finding Evasions; whereas the Character of an honest Man, is to surrender himself to the Truth, as soon as he perceives it, and to love it, even in the Mouth of his Adversary.

Secondly, The same Philosophers who pretend that all our Ideas proceed from our Senses, maintain likewise that all the Certitude and Evidence of Propositions, come either immediately or mediately from our Senses. For, say they, *even this Axiom, which passes for the clearest and most evident that can be desired: The whole is greater than its Part, has found no Belief in our Mind; but because, from our Infancy, we have observed in particular, that a whole Man is greater than his Head, a whole House greater than a Room, a whole Forest than a Tree, and the Heavens than a Star.*

This Imagination is as false as that we have refused in the first Part, *that all Ideas come from our Senses*; for if we were no otherwise assured of that Truth, that *the Whole is greater than its Part*, but by the various Observations we have made of it, ever since our Infancy, we would only be probably sure of it; since Induction is not a certain Means to know a Thing, but when we are sure that the Induction is entire; it being nothing more common, than to discover the Falsity of what we had imagined true, by Inductions which appeared so general as to be without Exception.

Therefore it is not of the Observations we have made ever since our Infancy, that the Truth of that Axiom depends; since, on the contrary, nothing is more capable to entertain us in the Error, than to mind those Prejudices of our Infancy; but it depends wholly from them, that the clear and distinct Idea we have of a *Whole*, and of a *Part*, includes clearly, that the Whole is greater than the Part, and the Part is smaller than the Whole.

What we have said of that Axiom, may be said of all the others; and therefore I believe that the Certitude and Evidence of the human Knowledge in natural Things depends on this Principle:—*All that is contained in the clear and distinct Idea of a Thing, can be affirmed with Truth of that Thing.*

Thus because to be an *Animal* is included in the Idea of *Man*, I can affirm of *Man* that he is an *Animal*:—Because to have all its Diameters equal, is included in the Idea of a Circle, I can affirm of all Circles, that all their Diameters are equal, &c.

This Principle cannot be contested without destroying all the Evidence of the human Knowledge, and establishing a ridiculous Pyrrhonism. For we cannot judge of Things but by the Ideas we have of them; since we have no other Means to conceive them, but by their being in our Mind, and are in it but by their Ideas. But if the Judgments we form in considering those Ideas, were only to regard our Thoughts, and not the Things in themselves, it is visible that we would have no Knowledge of the Things, but of our Thoughts only, and consequently know nothing of the Things which we imagine.

imagine to know most certainly, but only know that we think them to be such; which would destroy, manifestly, all the Sciences.

Which notwithstanding, that Principle alone is not sufficient to judge of what is to be received for *Axiom*. For there are Attributes which are truly included in the Idea of the Things, which notwithstanding can, and must be demonstrated of them as the Equality of all the Angles of a Triangle to two Rights, or all those of an Hexagon to eight Rights. But Care must be taken, if it be only wanted to consider the Idea of a Thing with but an indifferent Attention, to see clearly that such an Attribute is included in it, or if it be necessary besides, to join some other Idea to it, to perceive that Junction. When nothing but the Consideration of the Idea is wanted, the Proposition can be taken for *Axiom*, especially if that Consideration asks but an indifferent Attention, of which all common Minds are capable. But if some other Idea, besides the Idea of the Thing be wanted, it is a Proposition, which must be demonstrated: Therefore the two following Rules may be given for the *Axioms*.

First Rule.—When to see clearly that an Attribute is agreeable to a Subject, as to see that it belongs to the Whole to be greater than its Part, all that's wanted is, only to consider the two Ideas of the Subject and of the Attribute with an indifferent Attention, so that it cannot be done without perceiving that the Idea of the Attribute is truly included in the Idea of the Subject; then one can take that Proposition for an *Axiom*, which wants no Demonstration, because it has of itself all the Evidence it could borrow from the Demonstration, which could do nothing else but to shew, that that Attribute is agreeable to the Subject, in making Use of a third Idea to shew that Relation; which is seen already, without the Help of a third Idea.

But a simple Explication must not be confounded, if even there was some Form of Argument, with a true Demonstration: For there are *Axioms* which, to be better understood, want to be explained, though they want no Demonstration; the Explication being nothing else but to say in other Terms, and more at length, what is contained in the *Axiom*; whereas the Demonstration asks some other new Means, which is not contained clearly in the *Axioms*.

Second Rule.—When the sole Consideration of the Ideas of the Subject, and of the Attribute, is not sufficient to see clearly that the Attribute is agreeable to the Subject, the Proposition which affirms it ought not to be taken for *Axiom*; but it must be demonstrated, in making Use of some other Idea, to shew that Junction; as we make Use of the Idea of parallel Lines, to shew that the three Angles of a Triangle are equal to two Rights.

These two Rules are more important than one imagines: For it is one of our most common Imperfections, not to consult enough ourselves in what we affirm or deny, to trust to what we have heard said, or to our former Thoughts, without any Regard to what we should think, if we were to consider with more Attention what passes in our Mind; to mind more the Sound of Words, than our true Ideas; to affirm as clear and evident what we cannot conceive, and to deny as false, which it would be impossible for us not to believe true, if we would take the Trouble to think seriously upon it.

For Example, those that say that in a Piece of Wood, besides its Parts and their Situation, their Figure, their Motion, or their Rest, and the Pores found between those Parts, there is a substantial Form distinguished from all that, believe that they say nothing but what is certain: Which notwithstanding they say something which neither they nor any body else has ever understood, and never will understand.

If on the contrary one wants to explain to them the Effects of Nature by the insensible Parts, Bodies are composed of, and by their different Situation, Magnitude, Figure, Motion, or Rest, and by the Pores found between those Parts, which give or obstruct the Passage to other Matters, they think that one entertains them with Chimera's, though one says nothing but what they conceive very easily; and what is more pleasant still is,

that when one speaks to them of insensible Parts, they imagine themselves very well founded to reject them, because they can neither see nor feel them, and notwithstanding they content themselves with substantial Forms with Gravity, attractive Virtue, &c. which they not only can neither see nor feel, but not even conceive.

Note. That as to *Axioms*, every body agrees that it is important to have in the Mind several *Axioms* and Principles, which being clear and indubitable can serve us of Foundation to know the most hidden Things. But those commonly given are of so little Use, that it is almost needless to know them; for what they call the first Principle of Knowledge, *it is impossible that the same Thing should be and not be*, is very clear and very certain; but I see no Occasion where it can ever serve to give us any Knowledge; therefore I believe that the following ones will be more useful: I'll begin by that I have lately explained.

1. *AXIOM.* All that is contained in the clear and distinct Idea of a Thing, can be affirmed of it with Truth.

2. *AXIOM.*—Existence, at least possible, is contained in the Idea of all that we conceive clearly and distinctly. For when a Thing is conceived clearly, we must consider it as possible, since nothing but the Contradiction found between our Ideas can make us believe a Thing impossible: But there can be no Contradiction in an Idea when it is clear and distinct.

3. *AXIOM.*—Nothing cannot be the Cause of any Thing. From this *Axiom* arise others which can be called the Corollaries hereof, such as are the following.

4. *AXIOM, or first Corollary of the third.*—Neither a Thing nor any Perfection of that Thing actually existing, can have the Nothing, or a Thing not existing for the Cause of its Existence.

5. *AXIOM, or second Corollary of the third.*—All Reality or Perfection which is in a Thing, is found formally or eminently in its first and total Cause.

6. *AXIOM, or third Corollary of the third.*—A Body cannot move itself, i. e. give itself a Motion when it has none. This Principle is so naturally evident, that it is what has introduced the substantial Forms. For Philosophers seeing on one Part that it was impossible that what ought to be moved should move itself, and having falsely imagined on the other, that there was nothing without a Stone, which could push it downwards, when it fell, they have thought themselves obliged to distinguish two Things in a Stone, the Matter which receives the Motion, and the substantial Form, assisted with the Accident of the Gravity which gives the Motion, without considering that thereby they fell into the Inconvenience they wanted to avoid, if that Form was itself material, i. e. a true Matter, or that if it was not a Matter, it should be a Substance really distinct from it; which they could not conceive clearly, unless they should conceive it as a Spirit, i. e. a thinking Substance, as is truly the Form of Man, and not that of all the other Bodies.

7. *AXIOM, or fourth Corollary of the third.*—A Body cannot move another unless it be moved itself. For if a Body being at Rest cannot put itself in Motion, much less can it give Motion to another Body.

8. *AXIOM.*—One must not deny what is clear and evident, because one cannot conceive what is obscure.

9. *AXIOM.*—It is of the Nature of a finite Mind to not conceive the Infinite.

10. *AXIOM.*—The Testimony of a Person infinitely powerful, infinitely good, and infinitely true, must have more Strength to persuade our Mind, than the most convincing Reasons. For we must be more sure that he who is infinitely intelligent is not deceived, and he who is infinitely good does not deceive, than we are sure that we do not deceive ourselves in the most evident Things. These three last *Axioms* are the Foundations of Faith.

11. *AXIOM.*—The Facts of which our Senses can easily judge, being attested by a great Number of Persons of different Ages, of different Nations, and of different Interests, who speak of them as knowing them by themselves, and who cannot be suspected of having conspired together to countenance a Falshood, must pass for as constant and unquestionable, as if we had seen them with our own Eyes.

This is the Foundation of most of our Knowledge, there being infinitely more Things which we know that Way, than those we know by ourselves.

As to the Rules which Regard the Demonstrations.—A true *Demonstration* wants two Things; one that in the Matter there be nothing but certain and indubitable; the other that there should be nothing vicious in the Form of Argumenting. We certainly shall have one and the other, if we observe the two Rules already proposed. For nothing is more certain and more true than the Matter, if all the Propositions which are to be advanced to serve of Proofs, are:—Or the *Definitions* of the

Words already explained, which being arbitrary, cannot be contested:—Or the *Axioms*, which shall have been granted, and which must not have been supposed, if they were not clear and evident of themselves, according to the third Rule:—Or the *Propositions* already demonstrated, and consequently are become thereby clear and evident:—Or the *Construction* of the Thing itself in Question, when some Operation thereof is to be made; which must be as unquestionable as the rest, since that *Construction* must have been demonstrated possible before, if there was some Doubt that it is not possible.

LUTHERANISM.

LUTHERANISM, is the Sentiments of *Martin Luther*, and his Followers, with Regard to Religion.

Lutheranism had its Rise in the sixteenth Century. Its Author was born at *Isleben* in *Thuringia*, in 1483, of *John Luder*, and *Marguerite Linderman*. After his Studies at *Magdebourg*, *Issenac*, and *Erford*, where he took the Degree of Master of Arts; while yet but twenty Years of Age, he enter'd himself among the *Augustin* Monks at *Erford*, who received him with great Pleasure, as a Person of Merit, and whom they expected would do Honour to their Order.

In fact, *Luther* was of a quick and subtle Genius; naturally eloquent, disert, polite in his Language, infinitely laborious, and so assiduous to Study, that he used often to spend whole Days in it, without minding his Meals; whereby he acquired a great Knowledge of the Languages, and of the Fathers, and particularly of *St. Augustin*; but he had also a great Fund of Pride, Presumption, and Ambition, which made him despise all those who were not of his Sentiment; and treat with a brutish Insolence, all those who opposed his new Opinions, without Distinction, of Kings, Emperors, or any Thing of what is most reputable upon Earth; passionate, vindictive, imperious, wanting always to be Master, and to distinguish himself by the Novelty of his Doctrine.

This was the Man, whom (being then in the Strength of his Age, of 34 Years, and in a great Reputation at *Wittenberg*) the Vicar-General of the *Augustines*, let loose against the *Dominicans*, who in the Year 1517, preached the Indulgences of Pope *Leo X.* in *Saxony*. *Luther*, who loved Glory, pleased with so favourable an Occasion of making Parade of his Erudition and Eloquence, mounted the Pulpit, and preached with much Vehemency against the Mendicants, and Preachers of Indulgences, passing from the Abuses of particular Persons, to the Condemnation of Indulgences in general; pretending that they were more detrimental than useful; that they were but for pusillanimous Christians, who desired to exempt themselves from doing good, and from carrying the Cross of *Jesus Christ*, since they only remitted the Satisfaction which should be imposed on Sinners, *i. e.* Prayers, Mortifications of the Flesh, and Alms-giving, which are the Fruits of the Penitence one is obliged to do, during one's whole Life, according to the Gospel; afterwards he exhorted his Auditors to give rather for God's Sake to the Poor, the Money they were asked for the Fabrick of the Church of *St. Peter* at *Rome*, on the false Security of Indulgences, which he said were neither of Counsel nor of Precept, and of no Service for this World, nor for the other.

At the same Time he wrote to the Archbishop of *Mayence*, and of *Magdebourg*, intreating them to remedy the great Disorders caused by the Questors of Indulgences, and to procure that the People should be disabused, who, seduced by their Predications, thought that in buying Letters of Indulgences, they were sure of their Salvation. He took that Occasion to send to that Archbishop 95 Propositions, which he caused to be affixed the same Day, being the Eve of *All-Saints*, at the Gates of the Church of *Wittenberg*, nor, said he,

to maintain them as true, but only to examine them in a regular Dispute, the better to discover the Truth.

The Dominican, *John Titzel*, who found himself much maltreated in those Propositions of *Luther*, opposed to them 106 others, which he proposed at *Francfort* on the *Oder*. He even caused to be burnt, as Inquisitor of the Faith, those of *Luther*, whose Disciples to revenge their Master, burnt likewise, publicly at *Wittenberg*, those of *Titzel*. And this was as the Signal of that War, which ever since was waged, without Interruption, between the *Catholicks* and the *Lutherans*.

In fact, in the Year 1518, the famous Dr. *Ekins*, a very learned Man, and Professor of Theology at *Inghelstadt*, on one Part, and on the other *Sylvester Pierajque*, a Dominican, and Master of the sacred Palace, wrote against *Luther's* Propositions, who answered them at first, in a Manner smooth and civil enough. He even wrote a pretty long Treatise containing the Proofs and Authorities of the Fathers, he used to support his Propositions, and sent them to *Jerom*, Bishop of *Brandebourg*, his Diocesan, and to Pope *Leo* himself, with very submissive Letters, protesting that he was ready to submit himself to the Judgment of his Holiness on that Doctrine, as to that of *Jesus Christ* himself, who speaks through his Mouth.

This becoming Conduct of *Luther*, gain'd him, says *Cocblæ. æt. Luth.* the good Will and Approbation of a great Number of Persons, who imagined that he acted sincerely, searching only the Truth; and that his Adversaries, whose Impostures and Abuses he had discovered, accused him unjustly of Heresy. What render'd his Cause still more plausible, says the same Author, is, that *James Hofstratin*, a Dominican Inquisitor, writing against him, advised the Pope to employ nothing else but Fire and Sword against so wicked a Man, to rid the World of him as soon as possible.

In the mean Time, as the Accusation formed against *Luther*, was pursued at *Rome* with Vigour, the Pope cited him to appear within 60 Days at *Rome*, before his Judges, who were appointed by him. That Citation was made the 7th of *August*, 1518. even before the Reception of the Letter which the Emperor *Maximilien* wrote to the Diet of *Ausbourg*, and to Pope *Leo*, to desire him to terminate that Affair as soon as possible, assuring him that he would see his Sentence executed. But at the Instances of the Duke of *Saxony*, and of the University of *Wittenberg*, who wrote in *Luther's* Favour, the Pope consented that the Cause should be examined in *Germany*, and appointed for Judge the Cardinal *Cajetan*, *Thomas de Vioson* his Legate, who was then at *Ausbourg*. Duke *Frederick* obliged *Luther* to appear before that great Man, whose Merit, still more than his Dignity, render'd respectable. He obey'd that Order, and having receiv'd a Safe-Conduct from the Emperor, without which, according to the Advice of his Friends, he refused to appear, he came to *Ausbourg*, the 12th of *October*, 1518.

The Cardinal received him with a great deal of Humanity, and without entering into Disputes, which in fact did not become his Quality of Judge, he told him that the Pope commanded he should revoke the Errors contained in his Writings, and promise to maintain them

no more. *Luther* answered, that he thought himself guilty of no Errors, and desired that he should be shewed some in his Writings. The Legate marked him two, one, that against the Constitution of *Clement VI.* he denied that the infinite Merits of *Jesus Christ* be the Treasure of the Indulgencies; and the other that to be justified, it is only necessary to believe that our Sins are forgiven when we repent sincerely, which is against the Scripture which teaches us, that Man can never have an entire Certitude that he is in a State of Grace. *Luther* who had read that *Clementine*, answered, that he was not obliged to defer to it, because it only relates the Opinion of *St. Thomas.* And, after a pretty long Contestation on that first Point, without passing to the second, he saw that the Legate, who had no Reason to be satisfied with his Answers, pressed him always to retract himself, he asked Time to deliberate upon it till the next Day, at which Time he appeared with a Notary and Witnesses in the Presence of four Senators of *Aufbourg:* Then he made a Protestation, whereby he declared, that he submitted himself in all he had said or done, to the Judgment of the Roman Church; that having proposed nothing but by manner of Dispute, to inform himself of the Truth, against which he could not imagine that he had wrote any Thing, he could not, nor would retract himself, till he was shew'd that he had erred, which was not impossible, since being but a Man he was subject to Error; that he offers to render Reason, either in the Dispute or Writing, of all he had said, and was ready to subscribe to what should be decided on that Subject, by the Universities of *Basil, Fribourg, and Louvain,* and particularly that of *Paris, which is, said he, the Mother of the Sciences, and has always been the most flourishing in the Theology.*

But as after he had presented in a long Writing his Reasons, and the Passages of the Scripture he had borrowed to support them, the Legate without deferring to it, insisted always on his Retraction under the Penalty of the ecclesiastical Censures; he caused his Appeal to the Pope to be affixed in the Night, in publick Places, and retreated with some Precipitation to *Wittenberg,* under Pretence, that he was afraid of being arrested, together with his Protector *Stopitz.* He wrote notwithstanding to the Legate very civil Letters, in praising the Clemency with which he had received him, and excusing himself for having spoke to him in a Manner less respectful than he should have done: But he wrote to others, and even to the Pope himself in a quite different Style, complaining of the insupportable Tyranny of that Cardinal, who wanted to oblige him to a Recantation, without shewing him that he had erred, and who would never accept what he had offered, viz. to speak no more of those Indulgences, provided his Adversaries should be commanded to be silent likewise.

I know that several have blamed the Conduct of the Legate, either because he knew not how to manage the Genius of that Doctor, who could have been reduced by a little more Complaisance; or for having been too favourable to his Brethren the Dominicans, who had published the Indulgences in a Manner very little conformable to the true Spirit of the Church, which had been the Occasions of those dangerous Troubles. Others on the contrary excuse him, and maintain that he ought to have acted as he did, according to the express Orders he had to oblige *Luther* to retract himself, or to secure him: Which he had certainly done, had it not been for the safe Conduct of the Emperor, which that crafty Monk insisted upon, before he would appear before the Legate.

Tho' I have no Character to judge of those Differences, which are not yet very well decided, I'll say only, that I am of Opinion, that that Affair could have been terminated, in taking *Luther* by his own Writing, and oblige him to stand by the Protestation he had judiciously made of submitting himself to the Judgment of the Roman Church, and sending afterwards to the Pope the Reasons he had given in Writing for the Defence of his Propositions, and at the same Time imposing Silence to both Parties, as himself desired it, till the Pope had terminated their Differences by his Judgment. For as the Duke of *Saxony,* the University of *Wittenberg,* and all *Germany* acknowledged yet the Pope's Authority, *Luther,* who had so lately protested that he acknowledged

it likewise, had been oblig'd to submit himself to it; other wise it is evident that he had been abandoned as a Lier, and an Impostor: But because other Means were used, he became more bold and enterprising, adding new Dogma's to those he had first invented; and making a new Protestation, wherein, contrary to what he had said in the first, he declares, that though he is ready to submit himself to the Judgment of the Pope well informed; notwithstanding, as though Pope, he can err, as *St. Peter* erred when contradicted by *St. Paul,* he appealed to the general Council, which is above the Pope, of all that the Pope could do against him.

Pope *Leo* perceiving that it was impossible to stop the great Progress *Luther's* Doctrine made in *Germany,* under the Protection of Duke *Frederick* of *Saxony,* otherwise than by the rigorous Means his Predecessors had used on such Occasions, made at last his Constitution of the 15th of *June 1520,* whereby he condemns 41 Propositions extracted out of *Luther's* Books, some of them as manifestly heretical, and the others as scandalous, and schismatical, allowing him sixty Days to retract himself, and sixty others to send to *Rome* his Retraction in good Form, or to bring it himself, offering him a safe Conduct, and all other Security to that Effect; which Time expir'd, he declared him an Excommunicate, forbidding every Body to protect him, under the Penalty of incurring the same Censure, and of being deprived of all his Employments and Dignities.

Ekius was declared Nuncio to carry that Bull into *Germany,* and particularly to the Duke of *Saxony,* and to the University of *Wittenberg,* with Letters of his Holiness, to exhort them to have it published; but this Bull instead of weakening *Luther's* Interest, served on the contrary to promote it more. For his Partisans took Care to represent that Bull as an Effect of the Hatred and Animosity of the Doctor *Ekius* against him. Therefore the Bull remained at first as in Suspence in *Saxony,* and the Elector, who protected always *Luther,* though he dissembled yet, acted in such a Manner, that it was left for some Time, without either receiving or rejecting it. And in the same Time *Luther,* with whom the Duke and the University acted in concert, appealed anew, i. e. the 17th of *November, 1520.* from the Pope to the Council, wrote against the Bull, and maintained all the new Dogma's condemned in it; and he does it in treating always of Antichrist the Author of the Bull, whom he loads with a Multitude of very atrocious Injuries. And as he saw himself very sure of the Favour of the People, of the Court, of Men of Letters, and of the pretended Wits, who all declared for him with great Praises, he executed a very bold Enterprize to engage them all with him to declare an eternal War with the Pope, and to separate themselves for ever from the Roman Church: For having learned that his Books had been burnt at *Rome,* and in some Cities of *Flanders* and *Germany,* he caused, in his Turn, the Decree of *Gratian,* the Decretals of the Popes, the Clementines, the Extravagants, and above all the Bull fulminated against him, to be burnt publicly, and in a solemn Manner, without the Walls of *Wittenberg.*

Charles V. had succeeded *Maximilian,* in the Empire; *Luther,* who expected through the Favour of the Elector of *Saxony,* to whom *Charles* was entirely indebted for his Election, to gain him on his Side, wrote him a Letter full of Flattery and Submission, to ask his Protection, as *St. Athanasius* did to the Emperor *Constantine*, in a Persecution semblable to that he suffered, said he, for the Truth of the Gospel; and did spread several Labels, where, after he had treated the Pope in the most scurrilous Manner, says *Cochlea,* he wills that they should all submit themselves to the Emperor for the Reformation of the Church, whereof he is Protector. But *Luther's* Hopes were frustrated; for *Charles* who was come to *Aix la Chapelle* to be crowned, according to the ancient Custom, commanded, at the Instances of the Pope's Nuncio *John Alexander,* that *Luther's* Books should be burnt, in his Dominions of the *Low Countries;* but he referred to the Dyet of the Empire, the granting the second Request of the Nuncio, which was to make an Imperial Edict to extirpate from the Empire *Luther* and his Doctrine; for the *Lutheran* Party had render'd themselves so formidable in *Germany,* that several of the Em-

peror's Council was of Opinion, that it would not be prudent to expose, at first, the Authority of the Prince, in obliging him to make an Edict, which in all Appearance would not be obey'd. Not only the Duke of Saxony had declared openly for *Luther*, but likewise *Lewis* Count and Elektor *Palatine*, who drew after him several other Princes of his House. The Persons of Quality, allured by the Hope of sharing between them the Spoils of the rich Monasteries and Benefices which *Luther* pretended to abandon to them, embraced with all their Heart a Reformation which was so favourable to them, and threatened already to defend it by Arms. They had at their Head *Ulrick de Hutten*, a brave, and enterprising Man, agreeable, of a bright Genius, writing politely in Prose and Verse, in his natural Tongue, and in *Latin*. The People who heard nothing mentioned, but the Tyranny of the *Roman* Antichrist, look'd upon *Luther* as a great Prophet, whom God had sent to deliver the Church from the Yoke of human Laws and Traditions, wherewith the Christians, whom Christ had set at Liberty, had been miserably oppressed. The Ecclesiasticks, who were most of them very great Debauchees, and the Monks, who were tired of their Profession, heard with Pleasure speak of that Liberty, which flatter'd agreeably their Passions.

This was the Condition of *Luther's* Party while the Dyet was assembled at *Worms*; which was the Cause that some of the Emperor's Ministers were of Opinion, that it was not proper he should make yet an Edict against *Luther*, as solicited to it by the Pope's Nuncio. But that young Prince, who had a very just Discernment, discovered, easily, that the greatest Obstacle to that Affair, was the common Opinion, that all that was done at *Rome* against *Luther*, who had been lately excommunicated for the second Time by a Bull of the 3d of *January* 1520, was only for the Interest of the Pope, and of the Court of *Rome*, whereof that Doctor wanted that the Abuses should be corrected, and the Power moderated, to stop those odious Exactions, which had been made already, more than once, in *Germany*. Therefore the Emperor gave the Pope's Nuncio to understand, that it was proper he should shew clearly in the Dyet, that *Luther* attacked not only the Pope and the Court of *Rome*, but likewise the principal Points of the Christian Religion, which he was undertaking to destroy by his Errors, and which the Pope had condemned.

Palavicini says, *Act. Wormatiens. Arch. Vatican.* that the Nuncio *Alexander* followed punctually this Advice of the Emperor, in the Audience his Imperial Majesty procured him of the Dyet, where he gave to understand, in an Harangue which lasted three Hours, to that illustrious Assembly of the Princes and Deputies of the Empire, producing at the same Time *Luther's* Books, that it was necessary to abolish the Set of that Heretick (as he styled him) since it was equally pernicious to the Church and State: That he wanted to destroy the spiritual Authority of the Chief of the Church, and even that of the General Council; without which, there being no longer a Judge to know the true Sense of the Scripture in the Controversies, there would be as many Religions as Heads: That he denied the human Liberty, and wanted that Good and Evil should be the Effect of an unsurmountable Necessity, which opened a large Gate to Libertinism, and authorised all Sorts of Crimes, through a very reasonable Excuse, that one could not act otherwise: That he annihilated the entire Value of the Sacraments of the new Law, since he refused to allow that they produce Grace: That he gave to every Body, without Distinction, the Power to absolve: That he freed all Christians from all human Laws, under Pretence of a Christian Liberty very ill understood: That he denied that the Vows made to God were obligatory: That, lastly, he threw all the World into a frightful Confusion of all Things, without Laws, Hierarchy, Subordination, without Obedience neither to the Church, nor to Princes, nor even to God himself; since, according to that Heretick, he commands us Things which it is impossible for us to execute.—He added, that after all that had been done for four Years past, by all Sorts of Expedients to deliver the Church and the Empire from so great an Evil, there was no other Remedy left but an Imperial Edict, which being respected and received, with a perfect Submission, by all the Orders of the Empire, would make

so detestable an Heresy, and the Author thereof, be abhorred.

That Harangue, though very long, was heard with a great deal of Attention, and produced an Effect very advantageous to the Catholick Party; for after the Dyet had deliberated upon that Subject, they all agreed that *Luther's* Doctrine, called there *Heresy*, should be abolished, since it tended to the entire Ruin of the Christian Religion. But the Duke of Saxony, who agreed with the rest on the Right, stopt them on the Fact, and said, that since it was Question, to proscribe not only that Doctrine, but likewise the Doctor *Luther*, considered as the Author thereof, it was necessary, before they could proceed further, to hear him in that same Assembly, to know of him if it was true that he maintained those Propositions which were said to be in his Books.

The Emperor, who would not disoblige the Duke of Saxony, told the Pope's Nuncio, that *Luther* should be heard, lest it should be said that he had condemned a Man unheard, but that it would be only to know of him if he would retract the Errors contained in his Books. On which he wrote to *Luther* the 6th of *March*, 1521, and commanded him to come to *Worms* within twenty-one Days, and sent to bring him a Herald at Arms, with a safe Conduct for his Coming and Return, not only from him, but likewise from the whole Dyet, on Condition notwithstanding that he should not preach on the Road.

He departed then from *Wittenberg*, in a magnificent Coach, attended by a hundred Gentlemen on Horseback, who would accompany him to do him Honour, and to shew at the same Time, that they were ready to defend him, *Vi & Armis*. He entered *Worms* the 16th of *April* 1521, with only eight of his Horsemen, and the Day following was conducted, about four in the Afternoon, into the Hall of the Assembly, by Count *Pappenheim*, Marshal of the Empire, who did forbid him to speak otherwise than to answer precisely to what should be asked him, by the Emperor's Order.

Therefore the Official of *Treves* having told him, that the Emperor wanted to know two Things of him; the first, If he acknowledged all the Books which bore his Name? of which the Titles were read to him; and the second, If he would retract what had been condemned in them?—He answered to the first, that he acknowledged them for his, if nothing had been added to them: But for the second, he said, that as it was a Question of the most important Thing in the World, viz. of the Faith, and of the Word of God, he desired Time to think of it, lest that by a too precipitate Answer, he should say too little or too much, which had not been to confess Christ before Men, as he wanted to do. The Official, after it had been deliberated on that Answer, told him, that though as he knew what was to be asked him, he should have been ready to answer immediately, he particularly who was so famous a Doctor, his Imperial Majesty was notwithstanding pleased to give him Time 'till the next Day.

Therefore he had, that Day, another Audience of the Dyet, about Six in the Evening; and after he had persisted in his Answer to the first Chief, he answered to the second, that he was determined never to retract himself.

The Emperor, soon after the second Audience of *Luther*, had caused to be read in the Assembly of the Princes, a Writing whereby he was resolved to employ all his Forces, and even his own Life, to maintain the Catholick Religion he had received from the Emperors and the Kings his Predecessors, and which a miserable Apostate Monk had undertook to destroy: Therefore as he perceived that it was impossible to gain any Thing on *Luther's* Mind, he commanded him the 26th of *April* to depart from *Worms*; and gave him other 21 Days to retire himself into a Place of Safety, with the Herald who had brought him, and the same Safe-Conduct which had been given him to come to the Dyet. And a Month afterwards, says, *Cochlaeus, act. Luth.* he caused to be published in the great Church, in Presence of all the Princes, his imperial Edict, which puts *Luther* to the Ban of the Empire, as a Schismatick and declared Heretick, forbidding all Persons to receive or protect him, and to retain any of his Books. But this Edict was not executed as the Emperor expected. For the Duke of

Saxony, who knew very well that it would be published, and was not willing to offend the Emperor, nor abandon *Luther*, who acting in concert with him, had sent back the Herald from *Fribourg*, was arrested in a Forest by Persons mask'd, who conducted him to the Castle of *Westberg*, situated on a Mountain near *Alstadt*, where he was confined more than nine Months, and splendidly treated, without it being known where he was. It is even said, that the Duke of *Saxony*, who had only commanded in general that he should be put in a Place of Safety, would not be told of it; that he could swear to the Emperor that he knew not where *Luther* was; notwithstanding which his Partisans gave out every where, that he had been assassinated by the Papists, which caused a Sort of Sedition at *Worms*, and put the Pope's Nuncio, much hated by the *Lutherans*, in a very great Danger of his Life.

In that Solitude, which he called his Island of *Pathmos*, *Luther* wrote his Treatise against Auricular Confession; his Answer to Dr. *Laomus*, in which he maintains all what the Doctors of *Lovain* had condemned in his Writings, and especially that Proposition, that God commands Things which it is impossible for Men to execute; and that the Grace operates within us, the Good which God commands, that the Will contributes nothing towards it but Evil and Sin, which it always does in all Sorts of good Works, *omne opus bonum est peccatum*, *Luth. Tom. 2.* he also composed there his Treatise against private Masses, where he maintains that the Mass cannot be a Sacrifice, that it is of no Service to the Dead; that there is no Purgatory, nor Transubstantiation, the Body and Blood of *Jesus Christ* being in the Sacrament under the Substance of the Bread and Wine; that both Kinds of that Sacrament must be administered to the Laicks; that there is no Difference between Clerks and Laicks; and every one in the Church has the same Power to consecrate, administer the Sacraments, and to teach; though to observe some Order and *Bienfiance*, the Exercise of that Power is attributed to the Elders, called Priests and Bishops, both Names signifying the same Thing; that nothing obliges us in Conscience, but what is prescribed and commanded in the Gospel, the Precepts and Advices whereof oblige equally all Christians; that there are no other Vows obligatory, but those of Baptism. To prove which, he composed likewise in his Solitude; his Treatise against the monastick Vows, and against the Celibacy of the Ecclesiasticks, which he pretends to be void, as directly contrary to the Liberty of God's Children; which having open'd a Gate to the Libertinage of those who thirsted after their lost Liberty, the Monasteries of Men and Women were soon seen deserted, and a vast Number of Monks and Priests married in several Places of *Germany*.

But what vexed *Luther*, amidst his Conquests, was, to hear that the *Sorbonne*, to whose Judgment he had submitted himself, had the 15th of April, 1521, condemned his Doctrine in more than a hundred Propositions, extracted from his Books as execrable, heretical, impious, and blasphematory. He learned, likewise, that *Henry VIII.* King of *England* had sent to Pope *Leo*, a Book himself had wrote in Defence of the seven Sacraments, against that of *Luther*, *Of the Captivity of Babylon*; which engaged the Pope to give his *Britannick* Majesty, by an express Bull, the glorious Title of DEFENDER OF THE FAITH, which he retained, even after his Divorce from the *Roman Church*, which he called then his Good Mother, *Cogor tamen, says he, ne ingratitude maculer, matrem meam Christi sponsam; utinam tantâ cum facultate, quantâ cum voluntate defendere.* Which Title is still retained by his august Successors.

It would be pretty difficult to express the Impression these bad News made on *Luther's* Mind; he had always protested, as well by Word of Mouth, as by his Writings, especially before the Legate *Cajetan*, and at the famous Dispute of *Leipsic* (between him, his Disciple *Carlostad*, and the famous *Ekins*, who remained victorious, and forced the Master and his Disciple to quit the field) that he considered the Doctors of *Paris* as Masters of the true Theology; but his Passion making him pass all on a sudden to an Extremity of Rage and Fury, against those whom he had so much praised before, he treated them in the Answer he made to their Censure, and in

his other Writings, ever since that Time, and in all other Occasions, not only as the first Corrupters of that divine Science, but likewise as the most ignorant, the most stupid of all Men, without Wit, Light, Discernment, with an Infinity of other mean and low Invectives, beneath a Man who has the least Sentiment of Honour and Probity, and even against common Sense. He even would that his Disciple *Melancthon*, a very disert and eloquent Grammarian, should write against them, but in a Style, which, the Politeness and Purity excepted, is much more of the Master, than of the Disciple.

As for the King of *England*, he treated him in a still more insolent Manner than he had done the *Sorbonne*, of which this is a Specimen; *Ut nescias an ipsa mania sic insanire possit, aut ipsa stoliditas fatua sit, quam est caput hoc Henrici nostri. — Damnabilis putredo ista & vermis. Jus mihi erit Majestatem Anglicam, luto suo & stercore conspergere, &c. Luth. cont. Reg. Angliæ. tom. 2.*

While *Luther* was shut up in that Castle, the Duke of *Saxony* would not suffer him to come out, to appear in publick, for fear of offending the Emperor; his Disciple *Carlostad* thinking that he had as much Right as his Master to make himself Chief of a Party, went, accompanied with a great Number of young Men as bold as he, into the fine Church of *All Saints*, where they broke the Crucifixes, all the Images, pulled down the Altars, and committed several other Outrages. At this News, *Luther*, who could not suffer that his Disciple should undertake to become Master, came out of his Solitude, notwithstanding the Prohibition of the Elector, to whom he wrote to excuse himself, that he was more obliged to obey God, than the greatest Princes upon Earth. Afterwards he ran quickly to *Wittenberg*, where being followed by the People by whom he was adored, he ascended the Pulpit and inveighed bitterly against *Carlostad*, who having neither the Wit, nor the Eloquence of his Master, in whose Presence he used to tremble, did not dare to say a Word in his own Defence.

It is true, that *Luther* had wrote already against the Mass; but as he knew very well that the Duke of *Saxony* was not willing that any Thing should be changed yet, as to the Exterior, and that himself wanted a Mass in his Manner, very different from that of the Catholics; he said, that there were certain Things, which though good in themselves, were not, notwithstanding, to be done but with Order, to scandalize no Body. On which he publicly reprimanded *Carlostad*, for having undertook to do it of his own private Authority; and as to what related to Images, he called him Heretick and *Iconoclast*, saying, that the Images, except that of the Divinity, are allowed, and that it is good to have them, especially that of *Jesus Christ*.

The poor *Carlostad* was forced to suffer this publick Reprimand, in Spite of himself. But what provoked much more *Luther*, and obliged him to break entirely off with *Carlostad*, was, that to make a new Party against his Master, he denied the Reality of the Body and Blood of *Jesus Christ* in the Eucharist; which *Luther* could never suffer in the Sacramentarians, as the *Lutherans* cannot suffer it to this Day in the *Calvinists*, whatever Effort these last have made to unite themselves with them. He even confesses, *Sculsembur. de Cæn. Dom.* that to spite still more the Pope, he had been glad he could deny in Conscience the real Presence, but that the Scripture was so clear, and so formal on that Point, that he could by no Means oppose that Truth, without wanting to blind himself by a visible Malice. Therefore he pushed *Carlostad* so smartly, that that revolted Disciple was forced to quit *Wittenberg*, and retired to *Orlamonde*, a City on the *Sâle*, where he made a great Number of Proselytes; and from thence to *Zurich* (having been banished from *Saxony* by the Duke, and at the Solicitation of *Luther*) where he associated himself with *Zuingli*, who from a *Lutheran* was become a *Sacramentarian*.

About this Time, *i. e.* in 1522. *Luther* published his Book against the ecclesiastical Order; *Adversus falso nominatum statum Ecclesiasticorum*, *Luth. tom. 2.* and especially against the Bishops, whom he wanted to exterminate. He even opposed to the Bull in *Canâ Domini*, where the Pope had excommunicated him by Name, another Bull of his own making, entitled *The Bull*

and Reformation of Doctor Luther, in which he says, that all those who shall employ their Forces and Fortunes to ravish the Bishopricks, and abolish the Government of Bishops, are God's Children; and on the contrary, those who defend them or obey them are the Ministers of Satan.

When Luther was reproached at the Beginning of his Reformation, that his new Doctrine had caused nothing but Trouble and Confusion, he used to say, abusing the Words of Jesus Christ, *Think not that I am come to send Peace: I am come not to send Peace, but a Sword*, Matt. x. 34. This he verified in a Sense quite different from that he understood, in a Manner which proved very fatal to all Germany, by the War of the revolted Peasants, which began in the Year 1525, on the following Occasion.—When Luther coming out of his Solitude, did run to Wittemberg to stop the Insolence of Carlostad, he found that he had been engaged in his Enterprize, says Sleidan, l. 4. & 5. by Nicolas Stark and Thomas Muncer, the two first Chiefs of the Antouists or Anabaptists: For these two new Reformers had undertook to desert Luther, and make a new Sect, under Pretence that his Doctrine was too loose, saying, that one ought not to guide himself but by the Revelations he received in Meditation; that there were neither Laws, nor ecclesiastical or political Ordinances, which could oblige Men, who being all equally God's Children, and set at Liberty by Jesus Christ, should be all equal, without any Body could pretend lawfully to command others.

Luther, who saw the dangerous Consequences which so dangerous a Doctrine might have, and could not suffer besides, that any Body but him should pretend to make himself Chief of a Party, expelled those Fanaticks from Wittemberg, who did spread all over Germany; where they repeated so often, especially to the Peasants, the Doctrine of Luther on Man's natural Freedom, and that God had permitted them to have Recourse to open Force to deliver themselves from the Oppression of their Masters, or rather Tyrants either ecclesiastical or secular, who loaded them with unsupportable Burthens, and that God had decreed that all should be in common among his Children, as in the primitive Church; that there was at last a general Revolt of those Peasants, who proclaimed every where a pretended evangelical Liberty. This Disorder began in Suabia, where they appeared in Arms as well as in Wittemberg, Franconia, along the Rhine, and in Alsace, plundering, murdering, burning the Castles and Houses of Persons of Quality, whom they massacred without Pity, and without any Regard to their Quality, or to the Law of War. They were even so barbarous, that having took in Winsperg, Louis Count of Helfenstein, they massacred all the Nobility they found with him in the Place to defend it, and made him himself run through the Pikes, though the Princess his Wife, natural Daughter of the late Emperor Maximilian, having thrown herself at their Feet, with the young Prince her Son she held in her Arms, implored their Mercy, and asked them with Tears mixed with the innocent Cries of that Infant, the Life of her Husband.

Luther, in this Year of Trouble and Confusion, to which he had given Occasion by his new Doctrine, celebrated his Marriage. Two Years before, a Lutheran of Torgau had carried off, on Good Friday, nine Nuns at once, whom he conducted to Wittemberg, to be there in Safety under Luther's Protection. This caused a very great Scandal, and every body was very much irritated against this impious Ravisher, called Leonard Koppen; but Luther undertook his Defence, which he published in the vulgar Tongue, where, after he has praised him for having done an Action very agreeable to God, he says, that he will take Part in his Glory, and that himself advised him to it; and adds, *That it is a Rape like that Christ made the Day of his Passion, when he delivered the captive Souls from the Tyranny of Satan. Felicem raptorem, sicut & Christus raptor erat in mundo, quando per mortem suam, & quidem opportunissimo tempore in pascha, quo Christus suorum quoque captivam duxit captivitatem*, Luth. ap. Cochlae.

Among these nine libertine Nuns, all Persons of Quality, there was one called Catherine de Bore, whom Luther, who was yet in his Frock, found very handsome, and of whom he became passionately in Love. Not-

withstanding, though he had wrote already against the State of Virginity in favour of Matrimony; that he taught publickly that those who thought they had not the Gift of Continence, which he confessed sincerely he had not himself, not only could, but ought to marry, though they had made Vow of Chastity; and he had on that Subject certain Sentiments, which he expressed in a Manner, which the Respect I owe to the Reader hinders me from expressing, but which can be seen in his Sermon on Marriage, in the fifth Tome of his Works: He notwithstanding dared not to undertake to marry her, because the Elector Frederick, who hated those scandalous Changes, had never suffered it; but as that Prince had clos'd his Eyes, finding himself at full Liberty to do what he pleased, no Consideration could hinder him from gratifying his Passion, therefore he married publickly his Nun, and celebrated his Nuptials with all Sorts of Rejoycings, at the same Time all Saxony was in Tears for the Loss of their Elector, and all Germany for the Disorders caused by the War of the Peasants.

The Emperor Charles V. who through the Excess of his sincere Zeal for the Religion of his august Ancestors, and but too sensible of the great Ravages Luther's Reformation had caused already, and was so likely to cause in the Empire, in hopes of procuring a Reconciliation between the Catholics and the Lutherans, or to give a Check to the vast Progresses the new Sect made daily, convoked by his Letters Patent dated the 21st of January 1530, a Dyet at Ausbourg, for the 8th of April of the same Year, where he was to assist in Person, promising all Parties, that they should have the Liberty to propose freely in Writing all that they would say to maintain their Cause, and gave them all safe Conduct for their Coming and Return.

Mean while the Elector of Saxony, and the other Protestant Princes, who had been informed, that by the Treaty of Bologna, the Pope, the Emperor, and King Ferdinand his Brother, had entered into Engagements very disadvantageous to the new Religion they had embraced, deliberated on what they were to do for their Defence; and consulted among themselves, to know if it was not more proper to prevent the Evil of which they were threatned, and to go with the Forces they had, to meet the Emperor, who was advancing towards Tirol, to dispute with him the Passage of the Alps. A true Historian must render Justice to Merit wherever he finds it, without any Regard to the Quality of the Persons. I'll say then, without the least Fear, that the Posterity who is to read this concise Relation, will suspect me of being either Lutheran or Calvinist, that Luther acted on this Occasion, as the most honest Man, and the best Christian could have done: For he wrote to the Duke to dissuade him from that criminal Enterprize, saying, that it was not by open Force that the Cause of Religion was to be supported, but by good Reason, a Christian Patience, and above all by a great Confidence in God. The Duke of Saxony, who listened to Luther as to an Oracle; and at his Example the Princes his Associates took the Resolution to trust to the Emperor, and go to the Dyet; but before that the Duke assembled his principal Doctors with Luther, who digested by his Order their Profession of Faith into seventeen Articles, which served as Matter to the famous Confession of Ausbourg.

This done he departed for Ausbourg, accompanied by Luther; but for Fear of irritating the Emperor, by the Presence of a Man, whom he had proscribed by the Edict of Worms, he left him, says Sleidan, l. 5. c. 1. at Cobourg, one of his principal Fortresses on the Frontier of Franconia, and of the County of Henneberg, with a Promise that nothing should be done in the Dyet without consulting him. Afterwards, thinking that the Emperor would arrive sooner than he did, he went first to make his Entry at Ausbourg the 2d of May 1530, accompanied with Prince John Frederick his Son, Francis Duke of Lunebourg, Wolfgang Prince of Anhalt, of the Count Albert of Mansfeld, of all the Nobility of Saxony, and of 160 Horsemen very well armed, and cloathed with rich Caslocks of Scarlet, embroider'd with Gold. The other Princes ecclesiastick and secular, made likewise their publick Entry during the rest of the same Month of May, and the Beginning of June, each with an Equipage

page suitable to his Quality, and to his Rank in the Empire: Therefore while they were waiting for the Emperor, who had stopped in *Tyrol*, *Philip Melancthon* had Time to digest as he did, with a great deal of Dexterity, the Confession of Faith, which was to be presented to his Imperial Majesty.

Sculsenburg, *Calvin*, and *Florimond de Raimond* say, that this *Philip Melancthon* rendered so famous among the Protestants, was born in a small Borough of the lower *Palatinate* near the *Rhine*. He had received from Nature, in a very low Birth, so great a Genius, and so proper for the Sciences, that being yet but 21 Years of Age, he had acquired the Reputation of one of the most learned Men of *Germany*; therefore the Duke *Frederick* Elector of *Saxony*, placed him in the Year 1518, in his University of *Wittemberg*, where he contracted so great an Intimacy with *Luther*, that he became soon the greatest Confident he had. However, one may say, that never was seen so surprizing a Friendship between two Persons, so different in their Inclinations and Humour, and who were afterwards to hate so implacably one another: For *Luther*, as every body knows, was bold, enterprising, imperious, proud, haughty, and passionate, using neither Circumspection nor Decency, either in his Writing or his Words, when he was once in a Passion, decisive, firm, intrepid, and obstinate in his Sentiments, otherwise merry, agreeable, and of good Humour with his Friends. *Philip* on the contrary was meek, humble, moderate, complaisant, modest, very serious, loving Peace, and always ready for a Re-union if he had been Master; otherwise pusillanimous, without Firmness, or Resolution, doubting of every Thing; and so wavering in the Points of his Belief, of which he has wrote in different Manners, that the *Zuinglians*, *Calvinists*, and even the *Arians*, have pretended to have him on their Side: But this did not happen till after *Luther's* Death, for whom he had all the Submission, all the Deference, and all the Veneration a Disciple can have for his Master. *Luther*, on his Side, had for him so much Tendernefs, that he would receive no Advice but from him, and no body else would undertake to appease him when he was in a Passion.

Such was *Philip Melancthon*, who was ordered to digest the Confession of *Ausbourg*; which he did in twenty one Articles, some of which, as those concerning the divine Essence, the Trinity of the Persons, and the Incarnation of the Word, the Catholics confess to be orthodox. To these twenty-one Articles he added seven others, to reform, said he, the Abuses of the *Roman* Church, and which he entituled, *Of the Communion under both Kinds; of the Marriage of Priests; of the Mass; of the monastical Vows; and of the ecclesiastical Power*. This Profession of the Protestants, thus reduced into twenty-eight Articles by *Melancthon*, was immediately carried to *Luther* by an Express, the Duke of *Saxony* sent him, to know of him if there was nothing to be changed in it? *Luther* assured the Duke, in his Answer, that it pleased him much, and that he could change nothing in it; and that if even he could, it would not be proper to do it, because it would be impossible for him to use so much Circumspection, and to express himself in Terms so smooth, and so delicate.

By this Time the Emperor was arrived from *Trent* to *Innsbruck*, with King *Ferdinand* his Brother, the Queens of *Hungary* and *Bohemia*, the Cardinal *Campege* the Pope's Legate, the Cardinals of *Saltzburg*, *Trent*, and *Galmaria*, *Frederick* Count *Palatin*, the Marquis *John Albert* of *Brandebourg*, the Ambassadors of the Kings of *France*, *England*, and *Portugal*, and several Grandees of *Spain*. After he had staid fifteen Days at *Innsbruck*, he departed the 6th of *June*, passing through *Munich*, and arrived the 15th at *Ausbourg*, where towards the Evening he made his Entry with the greatest Magnificence, which had ever been seen yet in the Empire. The Emperor, who was a very handsome Prince, at the Age of Thirty, marched under a Canopy carried by the Senators of *Ausbourg*, dressed in the *Spanish* Fashion, to do Honour to his Nation, which was then at the greatest Pitch of Elevation it had ever been; he was all shining with Jewels, mounted on a beautiful *Polish* Horse, environed with all the young Princes, Sons of Electors, Dukes, Counts, and Marquises of the Empire; having

immediately before him the Elector of *Saxony* preceded by seventeen Princes, and carrying the imperial Sword naked, between *Joachim* Elector of *Brandebourg*, and the Baron *Valentin d'Erbach*, representing the Count *Louis* Elector *Palatin* his Master, followed by that who represented the Elector of *Treves*. On the Right walk'd the Elector of *Mayence*, with 200 Guards of the Emperor clothed in Cassocks of his Livery of yellow and black Velvet; on the Left of the Archbishop and Elector of *Cologne*, at the Head of 100 other Guards armed cap-a-pie. Immediately after the Canopy was seen King *Ferdinand* and the Pope's Legate, between 300 Guards of that Prince, with their Cassocks of red and white Velvet; after them three other Cardinals on their Mules, the Ambassadors of Kings, the Grand Master of the Teutonic Order, a long Retinue of Archbishops and Bishops, and of *German*, *Italian*, and *Spanish* Lords, and lastly, the Militia of *Ausbourg*, to the Number of 3 or 4000 Men, richly clothed, and with 12 Pieces of Cannon.

The Pomp ended by the *Te Deum* sung in the great Church: *Charles* having dismissed the Princes, retained the Protestants to tell them, that he pretended that the next Day, which was that of *Corpus Christi*, they should assist at the Procession of the Sacrament with the others, according to Custom, which they refused, pretending that they could not do it in Conscience.

On *Monday* the 20th of *June*, 1530, *Charles* wanting to open the Dyet, by the Mass of the Holy Ghost, which was solemnly sung in the Cathedral Church, he had told the Elector of *Saxony*, that he expected he should discharge on that Occasion his Office of Grand Marshal of the Empire, who is to carry the Sword before the Emperor in all publick Ceremonies. His Doctors having been consulted on that Subject answered, he might do it without scruple, by the Example of *Naaman*, whom the Prophet *Elisha* permitted to serve the King of *Syria* his Master, who used to lean on him in the Temple where he adored an Idol. Therefore the Elector obey'd and went to Church, accompanied with the other Protestant Princes, who all assisted at Mass, and at the *Latin* Harangue of the Pope's Nuncio, who exhorted them all with a great deal of Zeal to a Re-union with the Catholics.

After Mass the Emperor, followed by King *Ferdinand*, the Electors, Princes, and Deputies of the Towns, went to hold the first Session of the Dyet, in the great Hall of the Senate of *Ausbourg*, where after the Count *Palatin Frederick* had read to the Assembly a pretty long Writing, containing the Motives which had obliged the Emperor to convoke that Dyet, and the Things which were to be treated in it, it was determined, that they should begin by the Point of Religion, as the most important for the Peace and Tranquility of *Germany*: Therefore on *St. John's* Day, which was that of the second Session, after the Assembly had heard the *Latin* Harangue of the Pope's Nuncio, and that of the Deputies of *Austria*, who asked an immediate Succour against the *Turks*; the Elector of *Saxony*, accompanied by the Marquis *George* of *Brandebourg*, the Dukes *Francis* and *Ernest* of *Lunenburg* and *Brunswick*, *Philip* Landgrave of *Hesse*, and *Wolphang* Prince of *Anhalt*, went to place himself over-against the Throne of the Emperor, where the Doctor *George Pontanus* his Chancellor made a Discourse plausible enough, whereby those Princes humbly intreated the Emperor to permit that their Confession of Faith should be read publickly before all the Orders of the Empire. At first the Emperor wanted that they should only deliver it into his Hands, to have it examined at Leisure, and to deliberate afterwards upon it, with the Electors, the Princes, and those of his Council; but to take off all Subject of Complaint, it was resolved at last to grant them their Request, for the next Day, in the Hall of his Palace where the Assembly should meet to hear what they had to say.

Therefore the *Saturday* the 25th of *June*, the Elector of *Saxony*, with the Duke *John Frederick* his Son, the other five Protestant Princes, and the Deputies of *Nuremberg* and *Rutling*, having presented themselves before the Emperor about three in the Afternoon, with their Confession in *German* and *Latin*, containing the 28 Articles of their Belief and Discipline, with the Authorities which

which they had quoted to support them, it was read slowly, and with a very loud Voice, by one of the Elector's Counsellors, with an incredible Rejoycing of the *Lutherans*, who considered that Action as the Triumph of their Doctrine. They wrote afterwards every where, that it was found conform to the pure Word of God, and that those among the Papists who had most discredited it remained mute, and would not attempt henceforward to attack it.

But it appeared soon after that they were deceived, for the Refutation which the Catholick Doctors had made of all the Dogma's contained in that Confession having been examined and put in a good Form, the Emperor caused it to be read in the Assembly the 3d of *August*, then having asked the Opinions, it was generally approved by all the Catholicks, who far surpassed the *Lutherans* in Number. Afterwards the Emperor addressing himself to the Duke of *Saxony*, and to the other Princes his Associates, told them that they must conform themselves to the Sentiments of the Dyet, and approve the Writing they had heard read: They asked a Copy thereof, which after some Difficulty was granted, being told at the same Time, that after they had read it every one in their Particular they should return it to the Emperor, because the Dyet having pronounced on the two Pieces which had been read in it, there was no room to dispute, but only to submit to the Sentiment of the Assembly. They rejected that Condition with a Sort of Scorn; and even the Lantgrave left the Dyet without taking Leave, which the Emperor took very ill: But as the Catholick Princes were in hope, that they could be brought back in treating with them in a particular Conference; they obtained from the Prince, that seventeen Deputies should be chosen among the Electors, the Princes, the Bishops, and the Deputies of the Towns, to confer with them in an amicable Manner, as they did the 7th of *August* in the Chapterhouse of the Cathedral Church, where *Joachim I.* Elector of *Brandebourg*, made to the six Lutheran Princes a very strong and pathetical Discourse, to engage them to renounce their Confession, of which they had heard so solid a Refutation, by the Authorities of the Scripture, the Fathers, and the Councils.

They answered to all that two Days afterwards by Words of Mouth and by Writing, that they had not had all the Audience promised them, in convoking that Dyet; that they had been refused the Copy of that Refutation, which they could not approve in Conscience, and that the Council which had been promised to them was not likely to be convoked. To which the Elector *Joachim* replied, *That though their Confession had been read in full Dyet, containing all they had to say, according as themselves had said to the Emperor, that Conference was made to hear them as much and as long as they pleased; that the Copy of the Writing of the Catholick Doctors had been offered them, on a Condition which every Body found reasonable; that their Conscience should oblige them not to separate themselves from the Catholick Religion, but to renounce the Errors and Schism of an apostate Monk, who had seduced them; and that for the Council, besides that they knew very well that the Wars had always hindered its Convocation, Luther himself had declared at the Dyet of Worms, that he would not submit himself to a Judgment against whose Authority he wrote still daily.*

Though this Reply was not very pleasing to the *Lutherans*, notwithstanding, to shew that they were not Enemies of Peace, they consented, by *Melancthon's* Advice, who wanted a Re-union, and to terminate that Affair as soon as possible, to a Conference between seven Deputies of each Side, who should examine the Confession anew, which was done: In each Party, says *Sleidan*, lib. 7. and *Cochlæ*, two Princes, two Jurisconsults, and three Theologians were chosen; who met the 16th of *August*, 1530. and *Melancthon*, who was then Chief of the Party in *Luther's* Absence, acted in such a Manner by his usual Mitigations, in explaining in a tolerable Manner what was most shocking to the Catholicks in the Confession of *Ausbourg*, that the very next Day they all agreed on 15 Articles of the 21, which make the first Part of the Confession relating to the Dogma's of Faith. For besides those in which the *Lutherans* have always agreed with the Catholicks, with regard to the Mysteries

of the Christian Religion, it was confessed in the second, *that by Baptism the original Sin is washed off, though the Concupiscence, which is the Effect thereof, remain.* In the fourth, fifth, and sixth, *that it is not Faith alone, but Faith and the sanctifying Grace which justify us.* In the seventh and eighth, *that the Church does not contain the Elect only, but the Sinners likewise.* And in the seventeenth, *that we have our Free-Will, and that we can do nothing for our Salvation without Grace, and the supernatural Succours of God.*

They could not agree but in Part, on three Articles; for on the Twelfth the *Lutherans* would admit the Satisfaction as a Part of the Penitence, to produce the Fruits thereof according to the Gospel, but not as necessary for the Remission of the Pain due to our Sins. On the Twentieth they confessed the Necessity of good Works, but not their Merit. And as to the twenty-first, they acknowledged that the Angels and Saints pray for us, and would honour their Feasts and Memory, but not invoke them. The three other Articles, viz. the eleventh, fourteenth, and fifteenth, which are of the *sacramental Confession or Order*, and of the Ceremonies and Customs of the Church, were referred to the Examination of the second Part, which treats of the Abuses which they attributed to the *Roman Church*. It was here they could not agree entirely on either Article, whatever Means of Accommodation was proposed by either of the two Parties, because the *Lutherans* wanted always, that the Communion under both Kinds should be of divine Precept, that the Priests could marry, that the Mass was not a Sacrifice, that the Confession should be made in general, without descending into a particular Detale of Sins, that the Ceremonies, Feasts, and other Commandments of the Church, should not oblige in Conscience; and that the monastick Vows should be abolished. But as to the seventh and last Article, which related to Bishops, *Melancthon* who wanted to gain them and procure the Peace, relented much, by attributing to them almost the whole Extent of their Jurisdiction in their Diocese.

As the Report of the Result of that Conference was made afterwards in full Dyet, according to a reciprocal Agreement between the Parties; it was hoped, that as so great Advances had been made already towards a Re-union, a Peace could be soon procured, provided they continued to work on an Affair so happily began: And because they thought, that if the Conference was made between few Persons, they would sooner and easier agree than between a great Number, where there is more Contradiction, it was resolved to reduce the Number of the Deputies to three of each Side, viz. to two Canonists and to one Theologian, who was *Ekins* for the Catholicks, and *Melancthon* for the *Lutherans*. Mean while *Luther*, to whom Couriers were sent every Day, to inform him of what passed in the Dyet, and in those Conferences, was continually writing, either to the Duke of *Saxony*, or to the Doctors of his Party, that they granted too much, that they were deceived, and that they should be contented with having already used too much Condescension in their Confession without giving up new Things in those Conferences; that they had undertook a Thing entirely impossible, and that they could no more reconcile *Luther* with the Pope, than *Jesus Christ* with *Belial*; and I really believe him, for as *Luther* had no Religion, but as far as he made it subservient to his Ambition and Libertinage, he knew perfectly well, that if a Reconciliation had been made, his Reign, as Chief of a formidable Party, had soon been at an End; and the greatest Favour he could have expected then had been to have his Disorders forgiven, and to have the Liberty to return to his Cloister, without any other Punishment, which notwithstanding had been a very great one for *Luther*.

He wrote likewise several Libels in the vulgar Tongue, against the Emperor and the Bishops, to render them odious to the People and to the Nobility; and those scandalous Writings were distributed at *Ausbourg* during the Dyet, and in the other Towns, and calculated purposely to excite a Sedition, and hinder the Peace which was at the Point of being concluded between the Catholicks and Protestants.

In fact, in Consequence of these Writings of *Luther*,
Philip?

Philip Melancthon who had granted several Things which were not agreeable to those of his Party, was forbidden to grant any Thing more; so that the Conference was terminated towards the End of *August*, without concluding any Thing.

Therefore as *Charles* saw, says *Sleidan*, l. 7. and *Cocblee*, that neither his Prayers, nor his Promises, nor the strong Remonstrances he had caused to be made to them, even in his Presence, during the Month of *September*, had been of any Service to bring them to their Duty, he made at last, with the unanimous Consent of the other Princes, his Decree, which was read the Twenty-second of the same Month, to the Duke of *Saxony*, to the Princes his Associates, and to the Deputies. That Decree bears, that *the Emperor gives them Time to the Fifteenth of April, to declare if they will not conform themselves, in the Points of the Catholick Belief, to the Princes and other Members of the Empire, who, after they had heard the Refutation made of their Confession, which had been well examined, had generally reprobated it; and if they are not ready to renounce the Articles on which they disputed still, after they had abandoned the others in the Conferences which had been made on that Subject. That during that Time given them, they shall innovate nothing, nor permit any thing to be printed, against the Faith of the Roman Catholick Church. That they shall not likewise make Profelytes, as they have done till then; nor hinder the Catholicks, even their Subjects, from having the Exercise of the antient Religion in their Dominions, and the Priests and Monks from celebrating publicly their Masses, and from administering the Sacraments with a full and entire Liberty; and lastly, that they shall join with the other Princes to exterminate the Anabaptists and Sacramentarians from the Empire, &c.*

The *Lutheran* Princes surprised with that Decree, which they did not expect, presented the next Day to the Emperor an Apology, which *Melancthon* had made of their Confession; but as they saw that *Charles* would not so much as receive it, and that he had them told, That if they were not contented with that Decree, in which he was resolved to change nothing, they would oblige him to make another still stronger; they took also the Resolution among themselves, not to submit to it; and after they had said, with a great deal of Respect to the Emperor, that seeing him so firm in his Resolution, they were determined to importune him no more on that Subject, and abandoned themselves to God's Providence, he gave them Leave to return into their Dominions, leaving some of their Officers at *Ausbourg*, till the End of the Dyet, which lasted six Weeks longer; during which they treated of other Affairs, and especially of the Succours asked against the *Turks*, and to which the *Lutherans* would contribute nothing. At last the Emperor seeing that the *Lutherans* refused always obstinately to receive the Decree he had made, he made a second at the Conclusion of the Dyet, whereby he orders, *That the Catholick Religion should be practised throughout the whole Empire, and that all the Things of which he makes a long Detale, should be restored to their former State; and forbids all Sorts of Persons, under the Penalty of the Confiscation of Bodies and Goods, to change any thing in the Doctrine, Customs, and Ceremonies of the Church, till it had been ordered otherwise by the Council.*

Thus ended that famous Dyet of *Ausbourg*, and the Emperor accompanied by King *Ferdinand* his Brother, and several Princes went to *Cologne*; where the Archbishop of *Mayence* convoked by his Orders, the Electors, for the End of the same Year, and for the Election of a King of the *Romans*: But the *Lutherans*, afraid that that Assembly was concerted to oppress them, opposed it with all their Power, and resolved to unite themselves more than ever, as they did by the famous League of *Smalcalde*.

Smalcalde is a small Town of the County of *Henneberg*, belonging to the Lantgrave of *Hesse*, which has rendered itself famous by the frequent Assemblies of the *Lutheran* Princes, to treat there of the Interests of the common Cause of their Sect; there those Princes met the 22d of *December*, at the Instance of the Elector of *Saxony*, who went to meet them, instead of going to *Cologne*, where he sent Prince *John Frederick* his Son, with Order to oppose in his Name the Election of a

King of the *Romans*. He protested that it was an Enterprize manifestly against the Golden Bull, which orders to preserve the Liberty of the Suffrages, that the Election shall be made after the Emperor's Demise, without attempting to give him a Successor while he is yet living. The other Princes his Associates joined with him for the same Effect, and wrote from *Smalcalde* to the Emperor, and to the Electors, to intreat them not to think of a Thing of so bad an Example, and so contrary to the German Liberty; but all their Remonstrances proved vain, for *Ferdinand* King of *Bohemia* and of *Hungary*, the Emperor's Brother, was the 5th of *January* elected King of the *Romans*, and crowned at *Aix-la-chapelle* the 11th of the same Month.

Therefore the *Lutheran* Princes concluded their League to defend mutually one another, against all those who would attempt to disturb them in the Exercise of their Religion, or even to attack the Emperor, in case they should think necessary to do it. This League concluded, the confederated Princes sent to the Kings of *France* and of *England*, who they both knew hated *Charles V.* a long Manifesto, to justify their Doctrine and their Conduct, and to ask them Succours against the Emperor, *Henry VIII.* King of *England*, who had not yet made his Divorce with the *Roman* Church, would not promise them any Succours, but only to use all his Credit to procure the Convocation of a Council for the Reformation of the Abuses which had been introduced in the Church. *Francis I.* King of *France*, who had no great Reason to be very well satisfied with the Emperor, promised them the same Thing the King of *England* had done, and engaged besides, to assist them for the Conservation of the Rights of the Empire; which they said had been violated by the Election of a King of the *Romans*, provided their League should be defensive only, and to maintain their Liberty if they were attacked on that Subject. These Negotiations of the Confederates with the King of *France*, made a greater Impression on the Emperor's Mind, than all they had done before, for afraid that his most Christian Majesty should gain any Advantage thereby, he sent *Albert* Archbishop of *Mayence*, and *Louis* Elector *Palatine* to treat of a Peace with the *Lutheran* Princes, who were then assembled at *Nuremberg*, while himself was holding a Dyet at *Spire*, which Peace was concluded the 23d of *July* on these Conditions, *That the Edicts of Worms and Ausbourg should remain suspended for the Lutherans only, who should be tolerated, and not disturbed on the Point of Religion, of which they should have the free Exercise, till the Decisions of the Council, the Convocation whereof the Emperor should procure in six Months, and the Celebration in a Year afterwards; and if such a Thing could not be obtained of the Pope, then a general Dyet should be assembled, where that Affair would be treated, to terminate it as it would be judged more proper for the Good of the Empire.*

The Emperor accomplished religiously what he had promised in that Treaty, and engaged the Pope, *Paul III.* to convoke the Council; but the *Lutheran* Princes, who had so long insisted on that Convocation, having assembled at *Smalcalde* according to Custom, whither they called *Luther*, who came accompanied with *Melancthon*, *Pometanus*, *Bucer*, *Osiander*, and several others of his most famous Disciples, to examine the Bull of Convocation, they had received from the Nuncio *Vorsius*, they declared by *Luther's* Advice, that they would never consent, that the Council should be assembled out of *Germany*, that the Pope should appear there as a Judge, or that he even should convoke it, which belonged to the Emperor, and to Kings. Then they caused a Manifesto to be dispersed throughout all *Europe*, containing their Reasons for refusing that the Council should be assembled at *Mantua* by the Pope: They addressed themselves particularly to the King of *France*, who, they expected, because of the War he had then with the Emperor, would grant them his Protection.

Therefore the Vice-chancellor of the Emperor, who had been sent by him to persuade those Princes to accept the Bull of Convocation, seeing that all his Remonstrances were vain, engaged the Catholick Princes to assemble at *Nuremberg*, there to oppose the *Lutherans* who wanted to abolish the Catholick Religion in their Dominions, by forcing their Subjects to become *Lutherans*, they

they obliged themselves to unite their Forces against all those who should undertake to disturb the Catholics in the Exercise of their Religion, and the Emperor and King *Ferdinand* were declared Chiefs of that League.

These two contrary Leagues made at *Smalcalde* and at *Nuremberg*, tending manifestly to a War, to which both Parties were preparing themselves, and notwithstanding, the *Lutherans*, who refused to join with the Emperor and the Catholics for the Council they had so often asked for to compose their Differences, protesting still that they wished for nothing else but Peace, asking even for that Effect a Conference with the Catholics, if the Emperor would consent to it: That Prince wrote from *Toledo* the 19th of *November* 1538. that he permitted them to assemble at *Franckfort*, as they did the 12th of *February* of the Year following. It was there that after more than a Month of tedious Contestations, it was concluded at last, under the good Pleasure of the Emperor, that as the Liberty of Conscience had been granted to the *Lutherans* by the Pacification of *Nuremberg*, but 'till the Convocation of the Council which the Emperor accepted, and they refused, they should be granted a Truce of fifteen Months, during which Theologians on both Sides should meet to treat in an amicable Manner of the Points contested in Presence of Deputies appointed for that Purpose, and to enter into an Agreement according to the Judgment of those Deputies, which should be accepted by both Parties: That during that Time neither the one nor the other should receive any Body anew into their League, and that the Ecclesiastics should enjoy peaceably the Estates they had yet in the Dominions of the *Lutheran* Princes, who also should be included in that Treaty, to the Exclusion of the Anabaptists and Sacramentarians.

The Emperor refused at first to ratify that Treaty, and the *Lutherans* imagining that it was calculated to surprize them unawares, received anew, contrary to the Tenor thereof, all those who asked to be received into their League. This Violation of the Treaty had infallibly made the Emperor take other Measures, if the *Lutheran* League being almost all on a sudden grown formidable, by the Acquisition of the Subjects of Prince *George* of *Saxony*, who soon after the Death of that Prince (who had always remained a zealous Catholic, though the other Princes of his august House were all turn'd *Lutherans*) embraced the new Opinions, and *Joachim* II. Marquis of *Brandebourg*, whom his Subjects engaged to change a Religion which his Father had always so strenuously defended, promising on that Condition to pay all his Debts: And made him alter the Resolution he seemed to have taken, of satisfying the Pope on the Subject of the Treaty concluded at *Franckfort* between the Catholics and the *Lutherans*, in a Manner contrary to the Privileges and Rights of the Church, which he notwithstanding approved and ratified, because he expected that *Francis* I. King of *France*, to whom he had solemnly promised the Investiture of the *Milanese* for the Duke of *Orleans* his second Son, and denied afterwards that he had ever made such a Promise, says *Sleidan*, l. 22. and *Jovinus*, would soon resent his Want of Faith. Therefore for Fear he should have too many Enemies to encounter with at once, he ratified the Treaty of *Franckfort*, which was very favourable to the *Lutherans*; and notwithstanding all that the Pope's Legate and his Nephew could say to divert that Blow which proved fatal to the Catholics, he permitted the Theologians of both Sides to agree between them as they should think proper, on the Articles contested relating to the Faith, and to the Discipline of the Church. He even went farther; for as the Theologians could not terminate that Agreement in the Conference of *Haguenau*, nor in that of *Worms*, because they were interrupted by other very important Affairs which happened to King *Ferdinand* and to the Emperor, he would himself have it concluded in his Presence in the general Dyet, he held for that Effect the next following Year at *Ratisbon*; to which he desired the Pope to send his Legate, with a full Power to act in his Name, to terminate the Differences subsisting between the Catholics and *Lutherans*.

The Pope, afraid that something should be done in the Dyet against his Authority, sent thither for his Legate,

the Cardinal *Gaspar Contarini*, a wise, learned, and virtuous Man, who had acquired a great deal of Glory, in several other very important Negotiations; but far from giving him the Power the Emperor desired, he on the contrary, did forbid him to define or change any Thing in the Discipline and Uses of the Church, under Pretence of that Accommodation which the Emperor pretended to procure; and to give or promise any Thing to the *Lutheran* Theologians, since he would not that it could be said, that they had been corrupted by Presents, to bring them back by so low and despicable Means, to the Belief of the Church; which notwithstanding, to shew that this Manner of Proceeding in that Affair was not an Effect of Parsimony or Avarice, he offered to contribute very considerable Sums to strengthen the Catholic League against that of the *Lutherans*, in case a War should be indispensable. Therefore he commanded his Legate to press first of all the Emperor, to make a good Peace with the King of *France*, judging, that it was the most efficacious Means in the present Conjunction, to reduce the *Lutherans*.

With these Instructions the Legate departed from *Rome*, and arrived at *Ratisbon* in the Month of *March*, 1541. to assist at the Dyet, where met with the Emperor all the Electors, and almost all the other Princes both Catholics and *Lutherans*, and the Deputies of the Towns of both Parties. Before the Opening of the Dyet, the Legate took his Time to speak to the Emperor, in a Manner equally strong and persuasive, of making a good and solid Peace with *Francis* I. as the surest Means to bring back the *Lutherans*, without all those needless Conferences: At which the Emperor being very much surprized, having resolved to keep the *Milanese*, answered, in interrupting him in a very rough Manner, contrary to his Custom, that he could not treat with a Prince, who always spoke as a Master in imposing Laws upon him, and prescribing to him the Conditions of Peace, without suffering him to make what Objections he thought proper: Which was the Cause that the Legate spoke no more of that Peace, to not prejudice his principal Design, which was that Accommodation which he expected to make between the Catholics and *Lutherans*, against the Advice of some of the most clear-sighted, who imagined it impossible.

Therefore, as the Emperor desired it still more than *Contarini*, for some Reasons very different from his, he caused to be delivered to him in secret, by his prime Minister *Nicolas Granvelle*, a Writing containing twenty two Articles, which he said had been digested by very learned Doctors, who believed in their Conscience that they could be accepted by both Parties, without any Prejudice to the Catholic Faith; though *Cochlée* says positively, that *Martin Bucer* a Preacher at *Straßbourg*, and Apostate of the Order of St. *Dominick*, had had a Hand in it, and had instilled craftily into them the Venom of his Errors. Therefore the Legate, who was a very learned Man, says the same perceiving it, changed something in twenty Articles to rectify them; but on the other Part, as he would have the Glory of making that Accommodation, which was absolutely impossible, he made use in some of those Articles, as in those of the Justification, of the Merit of good Works, and of Faith, of certain ambiguous Expressions, of which neither Party appeared satisfied, because they did not express all what every one pretended to be essential to his Belief.

Therefore when that Exposition of Cardinal *Contarini*, was read in full Consistory at *Rome*, it was not approved; certain essential Words having been suppressed in it, of which the *Roman* Church makes Use to express the Catholic Truths; and among the rest that of Merit, with regard to good Works; under Pretence that it could be said that the *Lutherans* agreed with the Catholics on the Thing signified by that Term, viz. That what God gives us for our Works is not our Right, and that we have it only in Virtue of the Promise God was pleased to make gratuitely of giving it, for those good Works we cannot do but by his Grace. And the Thing went even so far, that for that very Thing and several others on which the Cardinal was thought to have too much relented, especially on that of Justification, Cardinal *Caraffa*

Caraffa, who was since elected Pope, accused him of having betray'd the Cause of the Church. But others undertook his Defence, who acted so well in his Favour, that the Pope at last excused him, in that he had done nothing in that Affair, but by the Advice of his Theologians, who had approved that Exposition in the Manner he had corrected it.

It was then delivered, thus amended, to the Emperor, who said, at the opening of the Dyet in the Month of April 1541, that after all he had done to cause the Assembly of a General Council, where all Differences on the Subject of Religion should be terminated. In which he had not succeeded yet, he could find no better Means to pacify all those Troubles, than to chuse some learned Theologians of both Parties, Men of Probity, and Lovers of Peace, to agree among themselves, of what was to be believed on the Articles contested ; which was to be communicated to all the Orders of the Empire, and to the Pope's Legate, in order to make with an unanimous Consent, a good and solid Accommodation. Afterwards the whole Assembly having desired him to make that Choice himself, he named three of each Side ; those of the Catholicks were, the Doctors *Julius Pflugius*, *John Gropperus*, and *John Ekius* ; and those of the Lutherans were, *Philip Melancthon*, *Martin Bucer*, and *John Pistorius* : *Frederick Count Palatine* the Elector's Brother, and the Lord *Nicholas Granvell*, presided at that Conference ; at which assisted likewise seven or eight Persons of Quality, most of them Ministers of Princes, to be Witnesses of what should be transacted in it.

They began by the Examen of the Profession of Faith which had been presented to the Emperor, and which was thought could be accepted by both Parties: But after a whole Month of Examen and Dispute, those Theologians could never agree but on five or six Articles, viz. concerning Justification, Man's Liberty, original Sin, Baptism, good Works, and Episcopacy: But when they came to the others, and especially to that of the Eucharist, it was plainly seen that they would never agree, because it was not a Question then of the Manner of expressing oneself, which can be easily granted, but of the Thing itself, on which the Catholicks said they could not relent. They insisted, that the *Lutherans* should confess that the Substance of the Bread and Wine does not remain after Consecration; and that the Body of *Jesus Christ* remains still without the Use of the Sacrament, when the Host is kept in the Pix, or carried through the Streets, and that he is to be adored; which the *Lutherans* would not confess, no more than the Sacrifice of the Mass, the auricular Confession, the Infallibility of the Church represented by the Council, the Pope's Supremacy, and several other Things of the same Kind, where the Difference does not consist only in the Expression, but in the Thing itself expressed by the Terms used.

Therefore both having given their Advice in Writing, the Emperor communicated them to the Dyet, where he was much surprized to see that there was a still greater Disagreement, than in the Conference. For as he was of Opinion, that both Parties should stand by the Articles agreed upon by the Theologians, till the Assembly of a General or National Council, or another Imperial Dyet: The Legate, according to his Instructions, said, that the whole should be referred either to the Pope, or to the General Council, he would convoke soon. The Electors wanted, that the Articles which had been agreed upon in the Conference should be retained, but asked, that a Council should be held in *Germany* to confirm them, if they were found conformable to the Doctrine of the Church, and to pronounce decisively on the others. The Bishops, and other Catholick Princes, on the contrary, rejected those Articles, because they found them conceived in certain ambiguous Terms, which they thought the *Lutherans* might explain to the Advantage of their new Doctrine: And these afraid likewise, on their Side, that the Sense of the Catholicks should be attributed to these Articles, said that a clearer Explanation should be given on that Subject; that in short they would not receive them, but as far as they might be found conformable to the Confession of *Ausbourg*; and

that for the Council, they persisted always in their former Resolution, of consenting to none out of *Germany*, and where the Pope could be their Judge, neither by himself, nor by his Creatures.

As it was very difficult to agree in so great a Diversity of Sentiments, the Emperor, who following always his former Schemes, wanted Peace in *Germany*, and to please both Parties, for Fear *Francis I.* King of *France* should make there a strong Party against him, terminated by his Authority all those Contentions, and the Dyet, the 28th of *July 1541*, by an Edict, in which he declares that it is his Pleasure, that all that has been done in the Conference of the Doctors of both Parties, should be referred to the General Council; or if he cannot obtain it, to a national one of all *Germany*; or else to the next Dyet, which was to be held in eighteen Months; orders the *Lutherans* to stand by the Articles, which had been agreed upon, without Innovation; and the Bishops, to reform their Churches, and the Conduct of the Clergy, according to the Points of Reformation the Legate has prescribed to them: Forbidding besides, very strictly, to destroy the Monasteries, to usurp the Estate of the Church, and to solicit any body to quit the antient Religion.

All this was certainly very advantageous to the Catholics; but at the same Time to be secure likewise of the *Lutherans*, who he knew had asked, some Time before, the Protection of the King of *France*, he did, by an Artifice much beneath so great an Emperor, what was as good as an Edict, and entirely contrary to what he had but just done. For he gave them, in private, Letters Patent, in a good Form, whereby he granted them the Liberty to believe, and profess openly, what they should think proper with regard to the Articles proposed; explaining to their Advantage all that seemed to have been forbidden them by his Edict; permitting them to receive to their Communion all those who would embrace it; suspending the last Edict of *Ausbourg*, and all the others he had made against them; and, what they had not been capable to obtain till then, ordered the Imperial Chamber, to do them Justice as to others, without any Regard to the Religion they professed.

This pleased so much the *Lutheran* Princes, that they promised *Charles V.* all the Succours he expected from them against the *Turks*; and, without the least Regard to the Remonstrances of the King of *France's* Ambassadors, they ordered unanimously with the others, that the Duke of *Cleves* his Ally, whom he protected, should be put to the Ban of the Empire; and the Duke of *Savoy* his Enemy, whom he had divested of his Dominions, should be restored; and that no Subject of the Empire should be permitted to serve in *France*. On which it seems to me, that if *Francis I.* was well punished, for having a little too much depended on the *Lutherans*, without any great Reason on his Side; *Charles V.* was as severely handled, for having acted a double Part on this Occasion; and appeared under two Faces, tho' it was his Custom. For he lost in that same Year, by a frightful and unfortunate Shipwreck, out of which he but narrowly escaped himself, that fine Fleet he had carried against the *Algerines*; besides the Army he had in *Italy*, under the Command of the Marquis *du Guast*, which was entirely defeated by that of *France*, commanded by the Duke of *Anguien*, at the famous Battle of *Cerisoles*.

Mean while, the Pope took the Resolution to convoke the Council (which had been already twice convoked, once at *Mantua*, and the other Time at *Vicenza*) at *Trent*, believing that as that City was situated on the Frontier of *Germany*, and is of the Dependency of *Tirol*, and consequently of the Empire, the *Lutherans* should have no Pretext to refuse it, as they did all those of *Italy*. It is what he caused to be proposed by the Nuncio *Morneus* Bishop of *Modena*, to the Princes assembled at *Spire*, to deliberate on the Means to oppose the Progress of the *Turks*. That Proposition was received by King *Ferdinand* and the Catholics with great Thanks: But the *Lutherans* protested that they would never suffer, not only that the Pope should convoke the Council, but likewise that his Name should appear in the Decree made for its Convocation.

Notwithstanding this Protest, the Pope published the Indiction of the Council, by his Bull of the 22d of *May*,

1542. though he could not have chose a Conjunction less favourable to assemble it. For the War between the Emperor and the King of *France*, which was not carried on as before, by a Motive of Glory, Interest, or Ambition, but by a Spirit of Hatred and Animosity, which made them say and do Things not at all becoming those two great Princes, had thrown all *Europe* into a frightful Disorder. On the other Side the *Turk* taking Advantage of that War, waged a successful one in *Hungary*, and ravaged at the same Time all the Coasts of *Italy* with a powerful Fleet, so that as there was no Security to travel either by Land or by Sea; and the Bishops of *France*, *Spain*, and *Germany*, and even those of *Italy*, a little distant from *Trent*, dared not to venture themselves on the Road; the Pope after his Legates had waited in vain more than six Months, that there should be a sufficient Number of Fathers to open the Council, was obliged at last to defer it to a more proper Time.

Charles V. who while he wanted the Succours of the *Lutherans* against the King of *France*, had made them so many large and advantageous Concessions, with regard to the publick Exercise and Propagation of their Sect, that in that favourable Interval they had rendered themselves formidable, began in his Turn to be quite afraid of them; therefore after the Peace of *Crepy*, or of *St. John des Vignes*, concluded between him and *Francis I.* his Rival in Glory, in 1554. he began to think of destroying the Edifice himself had erected. As the two Monarchs had agreed between themselves that they should act henceforward for the Good of the Religion, they wrote both for the Indiction of the Council to the Pope, who joyfully acquiesced to their Request, by convoking by a new Bull of the 19th of *November*, 1544. the Council at *Trent*, for the 15th of *March* of the following Year, but the Difficulty was to make the *Lutherans* agree to it.

For that Purpose an Assembly of all the Orders of the Empire was held at *Worms*, in the Month of *March*, where King *Ferdinand* and the Cardinal of *Ausbourg*, who was there for the Emperor, proposed in his Name the two important Affairs which were to be treated in it, viz. the War against the *Turks*, and the Re-union of the Minds on the Subject of Religion. For this last Point they represented, that the Emperor and the King of *France* having at last caus'd the œcumenical Council so often and so long asked for to be convoked, there was nothing left but to propose in it on both Sides what was wanted to say, and then abide by what should be decreed in it: Therefore that nothing remained but to consult on the War against *Soliman*, for which King *Francis* had had the Generosity to promise the Empire a Succour worthy of so great a Prince. The Catholics consented freely to all that, but the *Lutherans* on the contrary maintained always, that they were assembled, according to the Resolution taken at the last Dyet of *Spire*, to establish a solid Peace in *Germany*, in making with an unanimous Consent, a Formula of Faith common to both Parties, which should be universally received, 'till it could be ordered otherwise by a general or national Council of *Germany*; that as for that convoked at *Trent*, and where the Pope was to preside, they would not, nor could acknowledge it for a legitimate Council.

Charles V. whom the Gout detained at *Bruxelles*, vexed at this Answer of the *Lutherans*, began from that Time to form within himself the Design he took afterwards of conquering by his Arms, that Party which tended manifestly to Rebellion, and to the entire Ruin of his Authority in the Empire; but as he knew perfectly well the Art of great Princes, which is that of dissembling well, to prevent and surprize their Enemies, he feigned to acquiesce to what they asked: Therefore taking for Pretext, that there were but very few Electors and Princes in that Assembly, and that even the Deputies had not a Power ample enough, he transferred it to *Ratisbon*, where all the Princes should be obliged to meet within the 6th of *January* of the following Year; and ordered at the same Time, that according to the Project of *Spire*, some Theologians of both Parties should digest a Formula of Faith before that Dyet, so that after having been examined in it, and changed what could be

found amiss, it might be received by both Parties.

Mean while the Council of *Trent*, of which I have given a concise Relation in my Treatise of Councils, under the Letter C, was opened with the usual Solemnities. But as the Emperor was making at the same Time very great warlike Preparations, the *Lutheran* Princes began to fear, that the Emperor, acting in concert with the Pope, designed to force them to submit themselves to the Decisions of the Council; on this Suspicion, which was not ill founded, they assembled at *Frankfort* on the *Maine*, in the Month of *January*, and in that Assembly confirmed anew their Confederation, and prolonged the Term thereof; after which they resolved to oppose themselves to the Council of *Trent*; to protect openly the Archbishop of *Cologne*, who had turned *Lutheran*, and whom the Emperor had cited to his Tribunal; to insist that the Emperor should accomplish his Promises to them, and which they were determined to obtain by all Sorts of Means, viz. that they should have full Liberty of practising their Religion indeperdently of the Council held at *Trent*, which they would by no Means acknowledge; and that the Imperial Chamber should be, for the future, composed of *Lutheran* Judges, as well as of Catholics.

Having took these violent Resolutions in their Assembly, they thought it was in vain to dissemble any longer, and that they should inform themselves of the real Intentions of the Emperor, and to be on their Guard, lest they should be surprized. Therefore the Landgrave wrote, towards the End of *January* 1546, to *Nicholas Granvelle*, Prime-Minister of the Emperor, that having learned from *Germany* and *Italy*, and from the Colonels themselves who had already received their Commission, that the Emperor made great Levies of Soldiers; that as he was at Peace with *France*, and the Truce which was negotiating with the *Turks* was on the Point of being concluded, they had Reason to fear, that the Calumnies of their Enemies having prevailed on their Innocence, in the Mind of the Prince, he was making that great Armament in Conjunction with the Pope their mortal Enemy, with whom it was rumoured every where, he designed to make War against them; which tended manifestly to disturb the Peace of *Germany*, which had been established in the preceding Dyets. He added at the End, that a clear and precise Answer was expected on that Subject.

To all that *Granvelle*, who was Master of the Secret of his Prince, and knew very well how to keep it, answered, that they were alarmed without Cause; that it was true that the Emperor had raised some Forces in *Flanders*, because the Kings of *France* and *England* his Neighbours being armed, it was neither safe, nor honest, he should be disarmed, and his Places without Garrisons; but as to what was said of that pretended League with the Pope, and of that Army with which the Emperor his Master prepared to go to the Dyet, were false Rumours, which ill-minded Persons spread without the least Appearance of Truth; of which themselves would be soon convinced, in seeing the Emperor enter *Germany*, accompanied with his Household only, on his Way to the Dyet of *Ratisbon*; where to shew them that he had no other View than to establish solidly the Peace he had granted them, he had already ordered, that the Theologians of the two Religions should confer together, and make that Project of Union, of Belief and Discipline, which should be received by both Parties, according to what had been resolved at the Dyet of *Worms*.

In fact the Emperor, to shew that he had no other Design than to execute the Decree of *Worms*, in causing a Formula to be made which should be approved by both Parties, had commanded those Theologians to assemble at *Ratisbon*, in order to form their Project of Union before his Arrival at the Dyet. Those were, for the Catholics, the Doctors *Peter Malvenda* a Spaniard, *Erard Billichius* a Carmelite Friar, *John Hefmester* an *Augustin*, and the celebrated *John Cochlare*. On the side of the *Lutherans* were chosen, *Martin Bucer*, *John Brentius*, *George Major*, and *Erard Kneppius*, in the room of *Melancthon*, who, according to his Custom, should have been at the Head of the others, and who notwithstanding was not at this Conference, which succeeded very ill to the *Lutherans*. For after the Spanish Doctor *Malvenda* had a long Time disputed on the Matter of Justification

against *Martin Bucer*, who was forced, says *Cochlaee*, by the Strength of his Arguments, to confess several Things which every Body thought could not be maintained. As the Presidents of the Conference, who were the Bishops of *Elftad*, the Count *Frederick of Frustenberg*, and *Julus Plugius* elected Bishop of *Naumberg*, wanted, according to the Emperor's Order, that what had passed in those Conferences should be kept secret, till a Report thereof should be made to the Dyet before his Imperial Majesty; the *Lutherans* would not consent to it, pretending that they had Orders from their Masters to inform them of all that passed in that Conference, but while they waited for the Emperor's Answer, to whom the Presidents had wrote on that Subject, the *Lutheran* Doctors fled from *Ratisbon*, abandoning shamefully the Conference, and the Field of Battle to the Catholics.

This sudden Retreat was found very surprizing, particularly by the Emperor, who complained of it to all Germany; and it cannot be perceived why they acted in that Manner, unless it was, perhaps, that the Confederates would not that it should be proceeded further, after the Death of their Prophet *Martin Luther*, which happened at that Time.

I know that the Catholick and *Lutheran* Writers, relate variously the Circumstances of his Death. These say, that he died like a great Saint in their Manner, and that he gave up the Ghost in thanking God for having made him know and love with all his Heart *Jesus Christ* his Son; for having given him, by his Grace, the Courage and Strength to preach to his Country the Truth of the Gospel. The others say, on the contrary, that he died as a Beast, without the least Sentiment of God, after he had eat and drank well. As for me, who fears to give into those Extremities, where Pre-occupation carries us but too often, I'll say sincerely, that having read the one and the other, I find that the Truth is, that while he was at *Wittemberg*, finishing his Commentaries on *Genesis*, the Counts of *Mansfeld*, who after the Death of the old Count their Father, a very zealous Catholick, had turn'd *Lutherans*, desired him to take the Trouble to transport himself to *Isbel*, the Place of his Birth, to accomodate the Differences occasion'd between them, about their Inheritance. At his Arrival there, in a Coach and six, with his Wife and his three Children, accompanied by a hundred and fifty Horse, which those Counts had sent to meet him, he was received with all Sorts of Magnificence, and rather as a great Prince, than as a Reformer.

The next Day he preached in the Church of *St. Andrew*, which he did three or four times more to a great Concourse of People; being every Day splendidly entertain'd, till the 17th of *February*, after he had supped very merrily, he complained of a great Pain in his Breast, and of a pretty violent Cholick. After some Remedies had been immediately administered to him, he slept about two Hours on a little green Bed, which was near at Hand, whence he was carried into his own Chamber; but as after 12 o'Clock at Night the Distemper increased, and he felt his Breast extremely oppressed, Physicians were in Haste sent for, who came a little too late, for in attempting to succour him, they found that he was dead, either of an Apoplexy, or of a Catarrhea. Thus *Luther* died, with very little Ceremony, in the 63d Year of his Age.

He was, without Doubt, a Man of Wit and Learning, and very eloquent in his natural Tongue; but it must be confessed, that he has had among a few good Qualities, so many Imperfections in his Humour, in his Conduct, in his Manners, and in his Writings, where there is nothing perfect, and which he has filled with a vast Number of Invectives, and with a thousand Things extremely low and despicable, that if he had not disturbed the Christian World as he has done, no Body in the World had ever spoke of him. The *Lutheran* Princes, however, by a strange Affection, caused all the Honours to be done to him, which the greatest Man upon Earth could have expected after his Death. The Elector of *Saxony* had his Body transported with a very magnificent Pomp to *Wittemberg*, where he caused a Monument of white Marble to be erected for him, environed with the Statues of the twelve Apostles, as if *Luther* had been the thirteenth, with regard to *Germany*.

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The Emperor being arrived at *Ratisbon*, in the Month of *May*, 1546. with a small Retinue, he was surprized that he could not find there, any of the Confederate Princes, whom he had so earnestly intreated to come thither in Person to work in Concert with him, to the Re-union of *Germany*. He wrote very severe Letters to them, on that Account, wherein he complains that their Theologians had abandoned the Conference began by his Orders, to agree on a Formula of Faith, according to which one could live in Peace, till the Assembly of a general or national Council; he even commands them to come to the Dyet, since their Chief and their Emperor was come there first, to procure with them the Good of the Empire; as he saw that neither Remonstrances nor Commands were minded, and that they had held a particular Assembly, to deliberate on the Means to ruinate entirely his good Designs, even by their Arms, he notwithstanding held the Dyet in the Month of *June*, 1546. where after he had asked the Assembly what Mean he could use to pacify *Germany*, so much disturbed by the Differences on the Subject of Religion, all the Catholics, who were in a far greater Number than the others, concluded that there was no other than that of submitting to the Council of *Trent*, and humbly intreated his Imperial Majesty to oblige to it the Deputies of the *Lutherans*, who never would consent to it. Then the Emperor resolved to dissemble no longer, and to undertake openly that War against the Rebels, which acquired him so much Glory.

As *Charles* had made already very great military Preparations, though he had no foreign Enemies to encounter with, since he had concluded a Truce with *Solyman*, by the Mediation of *Francis I.* King of *France*, and consequently was likewise at Peace with that great Prince, his Rival in Glory. Some Days after the Opening of the Dyet, in the Month of *June*, 1546. the Deputies of the *Lutherans*, say *Sleidan* and *Avila*, had all together an Audience of the Emperor, where they desired him to tell them, if there was a War, and against whom he armed so powerfully, that their Principals may serve him in that War. To which that Prince answer'd immediately, with a great deal of Resolution and Majesty, that it was to chastise some Rebels who were arming against him: That those who would join with him in so just an Enterprize, would find in him a good Master, and an Emperor who knows to reward his faithful Subjects according to their Merit; as for all the others who should refuse to serve him, he designed to treat them as Rebels. All the Deputies, surprized at such a Resolution, abandoned the Dyet, and returned to their Masters to inform them, that they ought to prepare themselves for a War.

As soon as the Emperor had made this Declaration to the Deputies, he sent his Manifesto to all the Imperial Cities, wherein he protested, that the War he was a going to undertake, was not a War of Religion, which appeared clearly by his suffering the *Lutheran* Princes and their Soldiers who served faithfully in his Armies, to live freely in their Belief; that he had entered into a Confederacy with the Pope, but as with a Prince who was to give him Succours against those who were Enemies of both; that his sole Design was to attack Rebels, who were guilty of the Crime of LEZE-MAJESTY, both divine and human, and who under the false Pretence of Religion, disturbed the Tranquility of *Germany*, wanted to destroy entirely the whole State of the Empire, and had rejected all the Ways of Accommodation which had been proposed to them, with an unanimous Consent in the general Dyets, and violated daily the most sacred Rights of the Empire, as far as to divest Princes of their own Dominions, witness the Landgrave, who after he had took all the Places of the Duke Henry of Brunswick, detained him besides in a dreadful Prison; and, lastly, setting themselves up as sovereign Masters of the People, or rather as their Tyrants, who would have soon oppressed the publick Liberty, if the Emperor, who had armed in its Defence, was not to stop by open Force the Violences and Disorders of those Rebels. Of all the Towns, none but that of *Strasbourg* undertook to make the Apology of the Confederates, whose Chiefs were *John Frederick* Elector of *Saxony*, and *Philip* Landgrave of *Hesse*; who on their Side answered to the Manifesto of the Emperor by another, where they pretended to prove, that the

the War which was a going to be waged against them, was nothing else but a War of Religion, to tyrannize their Conscience, and oblige them by open Force to submit themselves to the Pope and to his Council of *Trent*. They sent at the same Time to ask for Succours to foreign Princes, especially to the Kings of *France* and of *England*, who as they were at Peace with the Emperor, refused to engage in that Quarrel.

But notwithstanding that Disappointment, the Confederates found themselves in a very short Time much stronger than the Emperor, whose Forces were dispersed in several Places so very distant from one another, that they could not join him Time enough at *Ratisbon*, where he was then in but a very indifferent Condition to begin so great a War. In fact he had been capable yet to assemble but seven hundred Horse, two thousand Foot of the Regiment of *Madrucce*, and three thousand of that of *Renspach*, who a few Days afterwards were joined by two thousand eight hundred *Spaniards* of the Terce of the famous Colonel *Alvarez de Sonde*, who had served in *Hungary*, which together made not above a little more than eight thousand Men, which were but few, I will not say to take the Field, but to defend oneself in a large City, without Fortifications, almost all *Lutherans*, and where there was neither Cannon nor Munitions, which the Emperor had order'd should be sent to him from *Vienna*, by the *Danube*. On the contrary, the *Lutherans*, who having always mistrusted the Emperor, had took their Precautions, raised with but little Trouble, soon after his Declaration, very numerous Forces, which they had soon formed into an Army. For the Imperial Cities, which were almost all of the League of *Smalcalde*, or at least *Lutheran*, contributed each profusely and quickly, Money, Provisions, Munitions, and Cannon, not at all doubting of the Victory, because the Landgrave, who was extremely presumptuous, and whom they thought a very great Captain, had promised them, that in three Months he should either expel *Charles* from *Germany*, or make him Prisoner, and deliver him to them in Fetters.

On that foolish Confidence, the first who took the Field, says *Sleidan*, l. 17. were the Forces of the Duke *Ulrick* of *Wittemberg*, consisting of twenty-four Ensigns of Infantry, accompanied by almost all the Nobility of the Country. They went to join the Forces of *Ausbourg*, and of the other Cities of *Suabia*, disposed under twenty-six Ensigns of Infantry, with a thousand Horse, making up in all, twenty-three or twenty-four thousand Men, with twenty-eight Pieces of Cannon. These Forces of *Suabia* were commanded by *Sebastian Shortel*, who after he had been a Sutler in the Army of the Duke of *Bourbon*, when he took *Rome*, had found Means to obtain a Place in the Emperor's Guards; and that Prince finding him a brave and ingenious Man, took him into Favour, and advanced him so much, that he became at last the richest, and most considerable Person of the City of *Ausbourg*, who intrusted him with the Command of their Forces for his Experience, and caused him to be declared Colonel of the Infantry of the Confederate Towns. This new Colonel having took fifteen or sixteen thousand Men of that Army of *Wittemberg* and *Suabia*, and declared, that he was not in Arms against the Emperor, but only to oppose the Passage of the *Italians*, whom the Pope, a declared Enemy of the *Germans*, was sending into their Country to destroy it, undertook to render himself Master of the two Passages through which they could go to join the Emperor.

For when one's arrived from *Trent* to *Inspruck*, where that Army of the Pope was to rendezvous, there are but two Ways to enter on that Side through *Bavaria* into *Germany*, one on the Right in descending along the River *Jus*, as far as to *Cuffstein*, a very strong Town, situated on the Frontier of *Tyrol* and of *Bavaria*; and the other on the Left, in crossing the *Alps* through a Valley, the Entrance whereof is so narrow, and so well commanded by a Fortrefs, which the *Italians* call *Chiusa*, and the *Germans*, *Eremberg*, that he who is Master of it, can stop a most formidable Army, without being possible for it to pass. *Shortel* being then departed from *Ausbourg* with his 15,000 Men, and the best Part of his Cannon, advanced as far as the *Chiusa*, and frighten'd so much by the Noise of his Cannon, him who commanded in it

for King *Ferdinand*, that he cowardly surrendered the Place.

After so happy a Beginning, *Shortel*, to cut to the Pope's Army the other Passage of *Cuffstein*, where the Emperor had put a good Garrison, marched directly to *Inspruck*, thinking to render himself Master of it, as easily as he had done of the *Chiusa*, but on his Way to it, he learn'd that the Militia of *Tyrol* had ran to the Succour of *Inspruck*, to the Number of twelve thousand Men, all good Soldiers, well disciplined, and commanded by the Count *Castelalte*, a *Tyrolese*, one of the most antient and bravest Colonels of *Germany*, who some Time afterwards retook the *Chiusa*. So that *Shortel* having thus been disappointed, returned back to *Ausbourg*, whence he went to join at *Ulm* the rest of the Confederate Army, which went the 24th of *July*, 1546. to *Donawert*, a *Lutheran* Town, to wait in that very advantageous Post for the Duke of *Saxony*, and the Landgrave. Those two Princes having assembled all their Forces, and traversed without Opposition all *Franconia*, which was all for them, except the Bishops, went a few Days afterwards to join those Forces, making all together, one of the most numerous and most formidable Armies which had been seen yet in *Germany*; for it was of 24,000 Foot, and 10,000 Horse, with 100 Pieces of Cannon.

It appear'd manifestly on that Occasion, that the *Saxon* and the Landgrave were not so great Captains as they pretended. For if after their Junction they had marched directly to *Ratisbon*, as they could do it, leaving nothing behind them which could harra'ss them; it is certain, that as there was no Appearance that the Emperor would have suffered himself to be invested in that Place, they had forced him to come out, with an evident Danger of being beaten on his Retreat, by an Army ten Times stronger than his. But whether they were not informed of his Condition, or they believed they should make their Forces rest after so long a March, or wanted Resolution, in seeing that of *Charles*, who seemed to wait for them; they spent several Days in Consultations, and resolved at last to cross the *Danube*, to go and take the small Town of *Rain*, where there was but one single Ensign to defend it, and then *Neubourg*, which the Duke *Otto Henry* of *Bavaria*, and Cousin of the Duke of *Saxony*, deliver'd to them. Mean while the Emperor strengthened himself daily by the Arrival of the Forces which were raised for him in *Germany*.

He even discovered by his Spies, that they designed to render themselves Masters of *Landshut*, a City of *Bavaria*, between *Ratisbon* and *Curffstein*, on the Road which the Forces coming from *Italy* were to pass thro', which was the best Party they could take to hinder their Junction; but at that Time they made another Mistake, which was to suffer the Emperor, who was much the best Captain, and much better versed in the military Art, to be before-hand with them. For before they had put themselves in a Condition to execute their Enterprise, he came out of *Ratisbon*, where he left 4000 Men under the Command of *Pyrrhus Colonna*, Marquis of *Matara*, and went to post himself advantageously with the rest of his Forces near *Landshut*, between the Enemy and that City, which he covered to receive there the Succours he expected, and which were near; saying, with an incredible Intrepidity, to those who believed that he exposed himself too much, that this was the Conjuncture he was resolved to remain alive or dead in *Germany*, and to receive well his Enemies if they dared to attack him in his Camp.

On this Occasion likewise, the Judgments or Hearts of the Confederates failed them, where they could fight with so much Advantage the Emperor, who had but a Handful of Men, in Comparison to their great Army: Therefore instead of marching directly to him to attack him in his Retrenchments, which, had they been Soldiers, they could easily have forced with less Forces than they had; they contented themselves with acting a very low Fanfaronade, and in a very ridiculous Manner: For having posted themselves between *Munich* and *Ingolstadt*, six Leagues distant from the Emperor's Camp, they sent him a Trumpet with a Page, who according to the Custom of those Times, carried a Letter in a Cane, containing a Declaration of War against him, for

the Part of the Confederates. They were both conducted to the Tent of the Duke of *Alva*, Lieutenant-General of the Emperor; who knowing their Errand, told them at first, that the Answer they could reasonably expect was to be hanged on the Spot, but that the Emperor, who considered that they were only Messengers, had Compassion on them, on Condition they should carry for Answer the Edict of the Proscription of their Masters, whereby they had been put to the Ban of the Empire, ever since the 20th of the preceding Month: On which they were sent back with the Edict, which was delivered them. The Emperor would not read their Letter, not doubting but that, according to the usual Style of the Landgrave, a Prince extremely haughty, presumptuous, and violent, it ought to be conceived in Terms which affronted with Insolence his Imperial Majesty. In fact, he would not suffer that the Title of Emperor should be given him in that Letter, but only that of *Charles of Gaunt*, calling himself Emperor, which was the only Title they gave him during all that War: Wherefore the Soldiers of the Emperor used to say, in gaming those Rebels, *Let Charles of Gaunt alone, he'll teach them soon that he is Emperor.*

And in fact they were not mistaken in their Conjecture, founded on the great Merit of that Prince, and on the Want of Resolution and Conduct of his Enemies, who while they remained idle with their prodigious Army in their Camp, without daring to undertake any Thing on that of the Emperor, he received without the least Obstacle, all the Forces he expected from *Germany* and *Italy*. The first who arrived were those of the Pope, who arrived the 13th of *August*, without having met with any Thing to obstruct their Passage. This Army consisted of 12,000 Foot, and 600 Horse followed by 200 others of the Duke of *Florence*, and of 100 which the Duke of *Ferrara* kept in the Service of the Emperor. It was commanded by the Duke of *Parma*, *Ottavio Farnese*, the Emperor's Son-in-law.

These Forces were a few Days afterwards followed by the Addition of 3000 *Spaniards* from *Lombardy*, commanded by Colonel *Arze*, and of that of *Naples* of 3000 *Spaniards* more, all old Soldiers, with 200 light Horse commanded by the Prince of *Salmoné*. The 4000 *Germans*, whom Colonel *Chambourg* had raised in the Neighbourhood of the Black Forest; the *German* Horse which the Marquis *John* and *Albert* of *Brandebourg*, and the Grand Master of *Prussia* had raised, arrived almost all the same Time, at the Emperor's Camp, who found himself, after this Junction, to have a very fine Army. For he had in Infantry more than 16,000 *Germans*, 8 or 9000 native *Spaniards* of the old Bands, 12,000 *Italians*, and 5 or 6000 Horse, which made in all above 40,000 Men, the best he had ever had, even in the Opinion of those who had served in the other Armies he had commanded in Person, in *Austria* against *Solyman*, or in *France*, or *Africa*.

With this fine Army he came out of his Camp, and having took the 4000 Men he had left at *Ratisbon*, with 35 Pieces of Cannon, he went to cross the *Danube* at *Neustadt*, which the Enemy had already repassed at *Neubourg*. From whence marching in Battle in three Columns, accompanied by the Archduke *Maximilian* his Nephew, and by Prince *Philbert Emanuel* of *Savoy*, whom he had always at his Side, he render'd himself Master of *Ingolstadt*, and went to encamp in the Night between the 27th and 28th of *August* beyond that City, at the Distance of two Leagues from the Camp of the Enemies, having *Ingolstadt* behind him, which sheltered him against any Insult on that Side, the *Danube* on the Left, a Marsh on the Right, and before him a very large Plain, through which the Confederates could easily go to him, in Battle array, to attack him in Front. Therefore the Duke of *Alva*, caused to be worked with so much Assiduity during the whole Night, that at Day-break all that Space was inclosed with a Ditch, from the *Danube* as far as the Marsh on the Right; but as it was not very deep, and the Lines made in digging it were very low, that could not have hinder'd brave Men and twice as strong as the *Imperialists* from attacking them, which the Emperor, who remained almost the whole Day in Order of Battle, expected.

But the Chiefs of the Confederates, who did not agree

very well among themselves, spent three or four Days in Contestations on the Party they should take; the one wanting to attack the Enemy before they could have Time to make stronger Retrenchments; the others, on the contrary, maintaining that they should wait till they could find Means to dislodge him, in order to fight him in open Field. But at last the Landgrave taking a Medium between those two Opinions, had Authority enough among them to have his Advice executed in this Manner: The whole Army having advanced so near, as to be but a League distant from the Emperor's Camp, went to post itself on Eminences which terminated the Plain on that Side, from whence they could go without any Obstacle to the Enemies; and after they had sent some Parties to reconnoitre their Retrenchments, they descended into the Plain one Day, at the Beginning of *September*, early in the Morning; and after they had crossed unperceiv'd, because of a Fog, a small River which parted the two Camps, it was ranged in Order of Battle, upon two Lines in the Form of a large Half-Moon, the better to invest the greatest Part of the Emperor's Camp. The Landgrave had placed in the first Line all the Cavalry, divided into nine or ten Squadrons, pretty far distant from one another, and had in their Front more than a hundred Pieces of Cannon: The Infantry marched behind on the second Line, much less extended than the first.

In this Order marched the Army of the Confederates, having at the Head of the Squadrons the Landgrave of *Hesse*, who would not attack the *Imperialists* in their Camp, as some wished he would, nor wait till they had decamped, which others had advised him to; but according to his own Imagination expected, that having by the Help of more than 100 Pieces of Cannon, which he kept continually firing on the *Imperialists*, whose Battalions and Squadrons were easily distinguished beyond the Lines which were very low, he could afterwards force easily their Retrenchments, which he supposed to find deserted by the Soldiers: But he found that he had to deal with those who were not easily frightened at much Noise, and who by their Intrepidity disconcerted all his Measures.

When the Emperor saw the Rebels coming to him in so good Order, he began to think then that they really designed to attack him; therefore he ranged all his Infantry along the Lines. The *Spaniards* had the Left on the Side of the *Danube*, where the right Point of the Enemies was more advanced than the other. They had on their Right the Regiments of Count *George* of *Reuspach*, and of the Marquis *de Marignan*, in a single Body. The *Italians* followed, taking up the whole Front of the Lines on the Side of the Plain; then the Regiments of *Madrucé* and *Chambourg*, turning always to the Right as far as the Marsh; the rest, which was all open as far as *Ingolstadt*, was designed to be divided into four large Squadrons to oppose those who should attempt to enter on that Side.

It was about 10 o'Clock, when the Landgrave finding himself but about 600 Paces from the Lines, caused a Discharge to be made of all the Cannon he had on his Right upon the *Spaniards*; then drawing as near as he thought necessary, to have all the Effect he expected, the whole Army halted, they fir'd without Interruption from all the Batteries, one after another, with such Violence, that it seemed as if it rained Bullets in the Camp. It was on that Occasion that the Presence of Mind of *Charles V.* his Courage, Valour, and Intrepidity appeared in all their Lustre, exposing himself like the meanest of his Soldiers to the Fire of the Enemies, to encourage his Army to receive them well in case they should attempt to enter the Retrenchments, which they did not; for the Landgrave having in vain cannonaded the *Imperialists* during eight or nine Hours, was obliged at last, Night approaching, to retreat as far as the little River he had crossed in the Morning, along which he encamped: He wanted notwithstanding that the World should believe that he had done much Execution; therefore that very Evening as he was at Supper with the principal Officers of the Army he took a Bumper of Wine, and addressing himself to *Shortel*, *Let's drink*, said he, *to all those whom our Cannon has sent this Day into the other World.* To which *Shortel*, who had been

of Opinion that the Lines of the Enemies should have been attacked Sword in Hand, answered, *I don't know, my Lord, how many we have killed, but I have very well observed that of all them left alive, not one has quitted his Post, or lost an Inch of Ground.*

This was as the Forerunner of all the Misfortunes which attended, afterwards, this Army of the Confederates. For after they had made two or three other such frivolous Attempts; the Emperor, harrassing them continually by his Parties, and frequent Skirmishes, they were forced at last to quit the Field first, and to retreat towards *Donawert*, whither the Emperor pursued them; being continually at their Heels, till he forced, at last, the Elector of *Saxony* and the Landgrave of *Hesse*, who had never agreed very well together ever since the Beginning of the War, to divide their Forces; the Duke of *Saxony* did run with the few Men he had left to the Succour of his Electorate, which his Cousin Duke *Maurice* had invaded at the Solicitation of the Emperor, who promised to give it him; and the Landgrave retreated, or rather fled into his Country with 5 or 600 Horse, deplorable Remains of that formidable Army, with which he had promised the Confederates he would either expel the Emperor from *Germany*, or take him Prisoner.

But *Charles*, who after this Disaster of the Confederates, thought of nothing else but of restoring Peace and Tranquility in *Germany*, learned at *Ulm* the great Progresses of the Elector of *Saxony*, who with the powerful Succours he had received from *Lower Saxony*, had not only retaken all that King *Ferdinand* and Duke *Maurice* had rendered themselves Masters of, but took likewise most of the Places of that Duke, and had even defeated in a great Combat the Marquis *Albert* of *Brandebourg*, sent by the Emperor to *Maurice's* Succour; then *Charles* without trusting any more to any Body else, went himself to put an End to that War, which it seemed could not be terminated but by him alone: Therefore he departed from *Ulm* at the Beginning of *March* 1547. and notwithstanding the Rigour of the Season, which increased a Fit of the Gout he had had at *Ulm* before his Departure, of which he was not very well cured, which stopt him at *Norlinguen*, where the Physicians despaired so much of his Health, that it was not expected he could make the Campaign in Person. But the Impatience and ardent Desire he had to go and finish that War by a Battle, made him quit his Bed in few Days, more supported by his Courage than by the Strength of Nature, being much weakened by this Relapse, which notwithstanding could not hinder him from departing from *Norlinguen*, the 21st of the same Month of *March*, where the Duke d'*Alva* had assembled all his Forces, which consisted then only of his three *Spanish* Terces, with the two Regiments of *Madruce* and *Marignan*, about 600 Light-Horse, and 1000 *German* Horse of the Grand Master of *Prussia*, and of the Marquis *John* of *Brandebourg*, the Elector's Brother.

With these Forces *Charles* went to join, towards the Month of *April*, at *Egra*, a Frontier City of *Bohemia*, the King of the *Romans* his Brother, and Duke *Maurice* of *Saxony*, who were bringing to him about 3000 Horse, they had gathered from the shatter'd Remains of their Forces, always beaten by the Elector of *Saxony*, who after the Defeat of the Marquis *Albert* was Master of the Country, and in a Condition to continue the War with very considerable Forces; notwithstanding which, he did not judge it expedient for him to encounter with the Emperor in a pitched Battle, who he knew was resolved to march directly to him. Therefore he did put the greatest Part of his Infantry in different Posts in *Misnia*, to oppose the Passage of the Imperial Army; and threw himself into *Meissen*, where there is a Bridge on the *Elbe*, having with him about 4000 Horse and 6000 Foot, of his best Troops, with twenty Pieces of Cannon; believing, that if he was pressed too much, he could always cross the *Elbe*, and afterwards break the Bridge, and make a safe Retreat to *Wittenberg*.

But the Courage and extreme Diligence of the Emperor, render'd all his Precautions vain, and disconcerted all his Measures. For departing from *Egra* the 13th of *April*, 1547. he traversed the *Wartland* and *Misnia* in ten Days of a continual March, running over all those

who attempted to oppose his Passage, and forcing all those Places wherein the *Saxons* had shut themselves, to dispute with him the Entrance thereof; and went to encamp the 22^d at two or three Leagues Distance from *Meissen*. There he learned from his Scouts that the Elector having abandoned *Meissen*, had passed the *Elbe*, broke the Bridge, and posted himself at *Mulberg*, five or six Leagues lower on the same River, which he designed to put between him and the Imperial Army, judging with Reason, that if the Emperor was to cross the River at *Meissen*, to go afterwards to attack him at *Mulberg*, it would be very easy to hinder him, with his Forces, and his twenty Pieces of Cannon he had placed along the Shoar, which on his Side was much higher than on the other. The Emperor therefore, who on that Advice understood very well the Design of the Elector, and had learn'd besides that there was a Ford near *Mulberg*, but so deep, that Part thereof was to be crossed swimming, took presently the Resolution, notwithstanding all that was said to dissuade him from an Enterprize which seemed impossible, to leave *Meissen* on the Right, and go directly to the Enemy, who were but three Leagues distant from his Camp, and to cross the River in their Sight, by swimming, or on Pontoons, and to fight them either at *Mulberg*, if the Elector had Resolution enough to wait for him, or on his Retreat, if he attempted to gain *Wittenberg*.

To be capable to execute his Project, he gave his Forces all the following Day to rest themselves after the Fatigues of so long a March, and towards the Evening of the same Day, *April* 23, 1547, he ordered the Departure of the Artillery and of the Carts which carried the Pontoons: About Twelve at Night the *Spanish* Infantry began to march, the *Germans* followed, then the whole Cavalry, and the Emperor himself a little before Day-light; who being arrived about Nine in the Morning at *Schemester* over-against *Mulberg*, he discovered the *Elbe*, and the Enemy ranged along that famous River to dispute the Passage thereof; the Elector on his Side did all he could to oppose the Execution of an Enterprize, which if successful might be very fatal to him. He left in *Mulberg* as many Forces as he thought necessary to hinder the Passage of the *Imperialists* on that Side: He reinforced those who defended the Shore, which though pretty high, was besides fortified with a Sort of Line and a Ditch. He placed some others in Boats of which he had made a Bridge, which could be cut into Three, to make it go down the River with less Difficulty, and himself with the rest of his Army went to range in Order of Battle a little beyond his Men, to sustain them, or if they were dislodged, to receive them, and make his Retreat before the *Imperialists* had done crossing the River.

On the other Side the Emperor found himself in a great Embarrass; he had before him a River large in that Place of about 300 Paces, and whose Current in that Extent was notwithstanding pretty rapid: He saw beyond it Forces in Order of Battle, with many Pieces of Cannon disposed on the opposite Shore risen in the Shape of a Platform, and ready to thunder against him, if he should attempt the Passage: He did not know precisely where the Ford was which they said was near *Mulberg*, and as there was a very great Plain between his Camp and the River, he could not get to it, without exposing himself to the whole Fire of the Enemy: But however, he surmounted all those Difficulties by his invincible Courage and Presence of Mind; for after he had sent every where in the Neighbourhood in Quest of some Body who should be acquainted with the Ford, he pointed his Cannon between certain Trees, which did cut the Plain in that Place, though pretty distant from the River, and placed behind those Trees 1000 *Spanish* Arquebusers bold and intrepid, to whom he commanded to advance, at the Favour of the first Discharge, to run to the River's Side, to enter it as far as they could, and make a continual Fire to disperse a little the Enemy, while the rest of the Army follow'd. These brave Men did run to that dangerous Skirmish with so much Intrepidity, and entered so far into the Water, that most of them had it above half their Body, and fired with such Fury on those who were on the opposite Shore, and on those who had thrown themselves into

the Boats, while the Cannon, which was very well served, fired without Intermission on the Enemies, that they began to give Ground, and quit their Posts. Then the Emperor, who at the Head of the Infantry had followed those Arquebusiers as far as to the Side of the *Elbe*, caused a thousand others to advance of the Terce of *Lombardy*, under the Command of Don *Louis d'Arza*, their Colonel. These by an Emulation of Glory, wanting to surpass the others, went so far into the River, and made such furious Discharges, seconded by those of the rest of the Infantry, which followed them, that the Saxons incapable to resist that Tempest, began to retreat with their Cannon; and those who guarded the Boats of their Bridge abandon'd them, after they had set them on Fire, which burnt but Part of them.

As the Emperor had not Pontoons enough to cross the *Elbe* in that Place, he addressed himself to the rest of the Spaniards, who were impatient to signalize themselves as well as their Comrades, and shewing them the Boats of the Enemy, carried off by the Current of the River: *It is to you*, said he, *Soldiers, that the Glory is reserved of putting us in a Condition to vanquish, by giving us what we want to perfect our Bridge, in order to go immediately to the Enemy.* Then ten of the old Spanish Soldiers, who under *Charles V.* acquired a Glory to their Nation, which those who are come after them, could not maintain under his Successors, undressed themselves quite naked, and throwing themselves into the Water, holding their Swords between their Teeth, swam amidst the Arquebusades, fired against them from the Walls, and the Castle of *Mulberg*, approached two Thirds of the Bridge which followed the Current of the River, got into it, killed all those they found in the Boats, and brought them to the Emperor, amidst the Applauses and Acclamations of the whole Army. Whereby the Emperor had wherewith to construct and throw quickly a Bridge on the *Elbe* to pass the Infantry and the Cannon.

While the Emperor was hastening the Construction of the Bridge, the Duke *d'Alva* brought him a young Peasant, who promised, that knowing very well the Ford, which he had crossed over a hundred Times, he would guide him without the least Danger to the other Side. *Charles* hearing him speak thus, gave the necessary Orders for the Guard of the Camp, and for the Passage of the Infantry, as soon as the Bridge would be finished, and immediately caused himself to be conducted to the Place where the Ford was, where he ranged all the Cavalry in order of Battle. He gave the Avant-guard to the Duke *d'Alva*, where he placed in the first Rank the *Hussars* to the Number of not above six hundred, because he had sent the others towards *Tergau* to guard the Avenues thereof, and to hinder the Enemy from retreating thither. These were supported by four hundred Light Horse, commanded by the Prince of *Sal-mone*, and Don *Antony of Toledo*, followed by a hundred Spanish Arquebusiers on Horseback, which terminated on the Left, that first Body. In the second, drawing towards the Right, was Duke *Maurice*, who commanded six hundred Lances, and two hundred Arquebusiers on Horseback, of his own Troops; and the Duke of *Castro* supported him with two hundred and twenty Men of Arms of the *Neapolitan* Cavalry. The Center of the Battle, which followed at some Interval, was likewise separated into two Bodies. The Emperor was at the Head of the first, which was but of five hundred Lances, and of about as many German Arquebusiers on Horseback; to whom *Charles*, who would command them in Person, gave that sensible Mark of the great Confidence he had in them, to animate them to behave well. The King of the *Romans*, his Brother, accompanied with his two Sons, the Archdukes *Maximilian* and *Ferdinand*, commanded the second, which was of six hundred Lances, and three hundred Arquebusiers, all Germans. So that this Cavalry was in all but of about four thousand Horse, ranged on two Lines in several Squadrons, each of seventeen Files, which gave them a very large Front, made the Army appear greater than it was in Reality, and hinder'd it from being easily surrounded, or taken in Flank.

Every Thing being thus disposed, the Duke *d'Alva*, according to the Emperor's Order, made the *Hussars*

cross first, then the Light Horse of the Prince of *Sal-mone*, and of Don *Antony of Toledo*, and the Spanish Carabins, having each a Fantassin riding behind. Afterwards he crossed himself at the Head of the *Neapolitan* Gendarmery, and of the German Horse who formed the second Body of the Van-guard. The Bottom of the Ford was hard and smooth, but the Water so high, that it reached above the Knees of the Men, and there were Places where the Horses lost Ground and were forced to swim over.

In this Condition, *Charles V.* crossed the *Elbe*, to go to fight, without Infantry and without Cannon, an Enemy who had both, and stronger than him by half.

As soon as the Emperor learned that the Enemies had abandon'd *Mulberg*, which he had caused to be attacked by the few Fantassins the Cavalry had carried over, and that the Duke of *Saxony* was retreating in Haste, though in order of Battle towards *Wittemberg*, he took the Resolution to pursue him, and without waiting for his Cannon and Infantry, to fight him in open Field, for fear, in waiting longer, he should have Time to reach *Wittemberg*, where he would be in Safety. On that Resolution, *Charles* caused his Van-guard to advance, from which the Duke *d'Alva* detached the *Hussars*, who running Post, according to their Custom, soon reached the Saxon Army, which retreated in Battle, in this Order. The Infantry of about 6000 Men marched first, divided into two large Battalions, with 20 Pieces of Cannon between; and the Cavalry of about 3000 Horses, was divided into nine Squadrons, which contrary to the Imperial Squadrons had their Front very narrow, and their Flanks very large. Four of those nine Squadrons covered on the Right and Left the Flank of the Infantry, and the five others marched behind them, having the Elector at their Head, who followed by a hundred Horse, ran from Squadron to Squadron, to give the necessary Orders, and to cause them to make Volt-face in proper Time, against the *Hussars* who harrassed them continually to retard their March; whereby they gave Time to the Duke *d'Alva* to join them, three Leagues from *Mulberg*, with all the Gendarmery of the Van-guard. Then the Elector of *Saxony*, who thought he had to deal but with that Van-guard, made his Army to face about, which at the same Time made a Discharge of their whole Artillery.

The Noise obliged the Emperor, who was not far, to make more Haste. The Saxons perceiving a new Body of Cavalry, which he thought still very far, reassumed his March to gain a Wood, which was pretty near, whereby he either could retire to *Wittemberg* in the Night, or at least fight to Advantage, if forced to it. But his Hope was frustrated, for before he could reach that Wood, near enough to draw any Advantage from it, he had the Imperialists at his Heels, so that to avoid being cut to Pieces, if he continued his March, he was forced to face about a second Time, and to fight. Therefore both Armies being in Presence, and ranged according to the Order they had kept till then, both prepared themselves to behave as well as they could.

The Emperor, who after he had extended himself on the Right, marched in Front on the same Line with the Vant-guard, having detached himself from his Squadron, ran throughout all the others, to inspire them with his Courage, and having given them the Word, which was, *St. George Empire, St. James Spain*, he went to replace himself at the Head of his Squadron, and marched directly to the Enemy. The Elector did likewise all that could be expected of a very brave Man, as he really was, to encourage his Men to fight well. Afterwards having placed himself at the Head of his Guards, observing that the Emperor had caused his Van-guard to pass first a Marsh he found on his March, he took that Opportunity to fight that Van-guard alone; and at that very Instant his Squadrons having retired on the Right and Left, at the Signal he gave, he made a whole Discharge of his Cannon and Musquetry in very good Order, his Men remaining afterwards in their Place, to wait for the Enemies, as the Elector had commanded it, which was the Cause in Part of his Defeat. For the Duke *d'Alva*, after that Salvo, which made more Noise than Execution, unwilling to give Time to the Enemies to make a second, informed the Emperor that he was going to charge them,

them, which he did with the *Neapolitan* Gendarmery, who attacked the first Squadrons of the right Line of the Enemy with such Fury; as did likewise Duke *Maurice* with his *Curassiers*, and *German* Carabins, those on the Left, and who were soon broken as well as the former. Almost at the same Time the Emperor who had crossed the Marsh, and had already took his Place on the Right, which he had before, attacked with his Gendarmery the Enemy, which King *Ferdinand* took in Flank, as the Hussars and light Horse of Prince *Salmoné* did on their Side in attacking the Right; so that the *Saxon* Cavalry invested and attacked so furiously on all Sides, was first put into Disorder, and in a Moment afterwards put to Flight, abandoning cowardly the Infantry, who made but very little Resistance, and were either cut to Pieces or made Prisoners; so that of those 9000 Saxons, none escaped but 400, who retreated with great Difficulty to *Wittemberg* with the Prince of Saxony, wounded in the Head and the Right-Hand. All was taken, Cannon, Munitions, all the Colours, and Standards, and among the rest that of the Elector of Saxony; and what was worth all the rest, the Duke himself, whom the Duke *d'Alva* delivered from the Hands of some Soldiers who had took him, and presented to the Emperor.

This Duke extremely big and lusty, was armed with a black Curasse, under which he wore a large Coat of Maile which descended as far as under his Knees; he was mounted on a very large Horse from *Frizland*, and had his Face all covered with Blood from a Cut he had received across his left Cheek: Though he was quite tired, he notwithstanding attempted to alight from his Horse. The Emperor having some Regard to his Bulk, and to the deplorable Condition he saw him in, would not suffer it, and contented himself with hearing him, when bowing as low as to his Saddle, he told him in a very submissive Manner, *Most potent and most clement Emperor, since it has pleased Fortune to deliver me into your Hands—Very well*, replied the Emperor interrupting him, *you speak at present in a quite different Manner than when you was pleased to call me Charles of Gaunt*. A Thunderbolt had not more surprized the poor *Saxon*, than he was at that just Reproach, to which he answered nothing, except that he desired the Emperor to treat him according to his Quality, and as a Prince; to which *Charles* answered, that *he should be treated according to his Merit*; and then ordered that he should be well guarded, and returned to his Camp, where he arrived about One in the Morning, after a Fight which had lasted about eight Hours, since it had begun on the Borders of the *Elbe* between Ten and Eleven in the Morning, and ended about Seven at Night, by the most compleat and most celebrated Victory *Charles* had gained, ever since he had commanded his Armies in Person, and which plunged the unhappy Duke of Saxony into an Abyss of Calamities, though he never appeared greater than on this Occasion; since all that the most severe Philosophy could inspire of Strength, Constancy, and Resolution to the most heroical Souls appeared with the greatest Lustre in the Conduct of that illustrious Unhappy after he was taken. He preserved always the same Serenity in his Countenance he had while in the greatest Prosperity, without giving the least Sign of Sorrow or Melancholly: He did not speak a single Word which could give the least Hint, I'll not say of Passion or Despair, but not even of Impatience or Uneasiness; always of an even Temper, good Humour, and having all the Manners of a Person of the greatest Probity, as he certainly was, and comforting with such Words, which an *Epietetus* or *Seneca* might have acknowledged for their own, the Duke *Ernest* of *Brunswick*, who having been taken Prisoner with him, had not the same philosophical Mind to support his Adversities.

This heroical Constancy and Resolution of the Duke appeared in a greater Light still, when the Sentence of Death which the Emperor had caused to be pronounced against him the 4th of May, was signified to him; for then he said only with a great Tranquility, *Provided the Emperor has not Wittemberg, which he expects to have by this Sentence, which he pronounces only to oblige the Dutchess my Wife, and my Children to deliver that Place, to redeem my Life at so high a Price, he'll gain nothing,*

and I only lose some few miserable Days, which I had been obliged to spend amidst the Infirmities of old Age. And then he invited the Duke *Ernest*, who was guarded in the same Tent, to a Game at Chefs, which he play'd with an incredible Presence of Mind, as if he had only heard a Sentence pronounced against some indifferent Person: Therefore it can be said of him, that as he has equal'd the greatest Princes in all Sorts of moral Virtues, which have render'd them worthy the Praises of Posterity, he has surpassed several of them in that memorable Constancy of Mind, which though vanquished, made him triumph in those Adversities, which often conquer the greatest Courages.

The Emperor notwithstanding had all he expected by that Sentence, *i. e. Wittemberg*, which he had begun already to besiege, though perhaps he had not took it. The Treaty concluded to save the Prisoner's Life was very hard on his Side, the principal Articles whereof were these, *That Wittemberg should be immediately delivered to the Emperor with all the Cannon and Munitions; that the Duke should be divested of his Electorate, of which the Emperor should give the Investiture to Duke Maurice, who was obliged to allow the deposed Elector 50,000 Crowns a Year, with some small Places which were left him in Thuringia; that the Marquis Albert of Brandebourg whom he had taken Prisoner, should be immediately set at Liberty; and that for himself he should remain Prisoner at the Emperor's Pleasure*. They wanted to oblige him likewise, to promise that he would abide for the Religion, by the Council which was assembled at *Trent*, but he protested always with so much Obstinacy, that he would never do it; that the Emperor who considered him then as nothing, did not judge proper to insist on that Point, contenting himself with obliging to it the other *Lutheran* Princes. For after his Victory he saw himself entire Master of *Germany*; all the other confederate Towns submitted themselves to him, and to whatever he pleased to order them. The Landgrave himself, notwithstanding his Haughtiness and Pride, till then not to be conquered, gave himself up at Discretion.

It is true, that he did all he could not to be reduced to so shameful an Extremity, which he abhorred more than Death itself; but as he saw that the Emperor was always inflexible with regard to him, and resolved to see him at his Feet ready to do all he would, was already marching against him with his victorious Army: He took at last the Resolution, by the Advice of the Duke *Maurice* his Son-in-law, and of the Elector of *Brandebourg*, who promised him more than the Emperor designed to perform, though they promised him nothing but what they really thought he would perform, and had promised to perform, to go to *Hall* in Saxony to meet the Emperor, who received him sitting on his Throne in Publick, environed with all the greatest Princes of the Empire, and with all the Officers of his Army. There the Landgrave on his Knees, and bare-headed, which he had a hundred Times protested he would never do, his Chancellor declared in his Name, *That he confessed his Crime, wherefore the Emperor, to whose Discretion he abandoned himself entirely, could treat him with all Sorts of Rigour: But that he humbly intreated him to forgive him for God's Sake, to raise the Ban of the Empire he had very justly published against him, to receive him and his Subjects into his Imperial Favour, promising for the future an inviolable Fidelity to his Imperial Majesty, and to execute punctually all that he had required of him, by the Articles he had accepted*.

Sleidan says, lib. 19. that the Emperor answered in German, by one of his Council, in these proper Terms: *Though the Landgrave of Hesse, by his own proper Confession, deserves all the Chastisements imaginable for his Rebellion, his Imperial Majesty notwithstanding, having Regard to the Submission with which he is come to throw himself at his Feet, and deliver himself into his Hands, and to the earnest Intreaties of the Princes who have interceded for him, has the Goodness to forbear having him beheaded, as he has deserved, or even punishing him with the entire Confiscation of his Estate and a perpetual Prison; but pardons him, provided he accomplishes what he has promised, according to the Articles granted him by the Imperial Majesty. As the Landgrave had in his Mind but what the Princes had promised him,*

Though *Charles V.* gained several Advantages over *Lutheranism*, and was a very great Conqueror and a fortunate Prince, *Luther* notwithstanding made a far greater Number, and much more considerable Conquests, and in fewer Years, than he did during his whole Reign ; for, besides the greatest Part of *Germany*, he gained the Kingdoms of *Sweden* and *Denmark*, Part of *Poland*, Part of *Hungary* ; and some Time afterwards introduced itself into those of *England* and *Scotland* ; though it had lost a great deal of Ground, at the latter End of the last Century and in this, by the Return to the *Roman Church* of that great and most excellent Prince *Augustus II.* late King of *Poland*, and Elector of *Saxony*, and by the Zeal of the present King of *Poland*, and Elector of *Saxony*, *Augustus III.* his Son, for the *Catholick Religion* : Likewise in *England*, where the Sentiments of *Luther* which seem incompatible with God's infinite Mercy, are rejected by the *English Church* as heterodox.

Now of all Parts of an animal Body, the Eye, we know, is the quickest; it moves with the greatest Celerity, and in all the Variety of Directions. Again, its Coats and Humours are permeable as any other Part of the

the Body (witness the Rays of Light it so copiously receives.) The Eye therefore no doubt emits its Effluvia, like the other Parts. The fine Humours of the Eye must be continually exhaling. The Heat of the pervading Rays will rarify and attenuate them; and that with the subtile Juice, or Spirit of the neighbouring optick Nerve, supplied in great Abundance, by the Vicinity of the Brain, must make a Fund of volatile Matter to be dispensed, and as it were determined by the Eye.

There then we have both the Dart and the Hand to sling it. The one furnished with all the Force and Vehemence, and the other with all the Sharpness and Activity one would require: No Wonder their Effects be great!

Do but conceive the Eye as a Sling, capable of the swiftest and intensest Motions and Vibrations; and again as communicating with a Source of such Matter, as the nervous Juice elaborated in the Brain; a Matter so subtile and penetrating, that it is supposed to fly instantaneously through the solid Capillaments of the Nerves, and so active and forcible that it distends and convulses the Muscles, and distorts the Limbs, and alters the whole Habitude of the Body, giving Motion and Action to a Mass of inert, inactive Matter. A Projectile of such a Nature, flung by an Engine as the Eye, must have an Effect wherever it strikes; and the Effect will be limited and modified by the Circumstances of Distance, the Impetus of the Eye, the Quality, Subtlety, Acrimony, &c. of the Juice; and the Delicacy, Coarseness, &c. of the Object it falls on.

This Theory, in the Opinion of those who have calculated it, may account for some of the Phenomena's of *Witchcraft*, particularly of that Branch called *Fascination*. It is certain the Eye has always been esteemed chief Seat, or rather Organ of *Witchcraft*; though by most, without knowing why, or wherefore: The Effect was apparently owing, but how, was not dreamed of. Thus the Phrase, to have an *evil Eye*, imports as much as to be a *Witch*. And hence *Virgil*, *Nescio quis teneros oculus mihi fascinat ugnos*. Again, old bilious Persons are those most frequently supposed to have the Faculties; the nervous Juice in them being depraved and irritated by a vicious Habitude of Body, and so rendered more penetrating and malignant. And young Persons, chiefly Boys and Girls, are most affected by it, by reason their Pores are patent, their Juices incoherent, and their Features delicate and susceptible. Accordingly the *Witchcraft* mentioned by *Virgil* only reaches to the tender Lambs. Lastly, the Faculty is only exercised when the Person is displeased, provoked, irritated, &c. it requiring some extraordinary Stress and Motion of Mind, to dart a proper Quantity of the Effluvia, with a sufficient Impetus, to produce the Effect at a Distance; that the Eye has some very considerable Power is past Dispute. The antient Naturalists assure us that the Basilisk and Opoblepa, kill other Animals merely by staring at them. If this fail of Credit, a late Author assures us, to have seen a Mouse running round a large Toad, which stood looking earnestly at its Mouth open; still the Mouse made less and less Circles about it, crying all the while as if compelled thereto; and at last, with a deal of seeming Reluctance, run into the gaping Mouth, and was streight swallowed.

Who has observed a Setting-Dog, and the Effect of his Eye on the Partridge? The poor Bird, when once his Eyes meet those of the Dog, stands as if confounded, regardless of itself, and easily lets the Net be drawn over it. We remember to have read of Squirrels stupified, and overcome by a Dog's staring hard at them, and thus made to drop out of their Trees into his Mouth.

That Man is not secure from the like Affections, is Matter of easy Observation: Few People but have again and again felt the Effects of an angry, a fierce, a commanding, a disdainful, a lascivious, an intreating Eye, &c. These Effects no doubt are owing to the different Ejaculations from the Eye, and are a Degree of *Witchcraft*.

This I must confess is not my Sentiment; for I consider *Witchcraft* as a mere Invention of weak Minds, who are pleased to attribute to extraordinary Causes what

is only the pure Effect of the many Accidents and natural Disorders the human Body is exposed to.

I know very well that all living Things emit Effluvia, which form a Kind of Atmosphere wherein they swim, or are environed with; but I'll never believe that those Effluvia's emitted through the Eyes of an Animal, can be projected into another Animal, so as to affect such another, viz. render him epileptick, or stupid, or lame, &c. in which *Witchcraft* is pretended to consist chiefly; and which to perform those Effluvia's thus emitted, must also be directed by the Will of the Animal whence they are emitted, and preserve that Direction, thro' the different Circumvolutions they are obliged to make from the Eyes, by which they are communicated, till they arrive at the Part it is designed they should affect, which is a very ridiculous Paradox.

The Example of Animals exhaling sweet or stinking Smells, to corroborate the pretended Truth of *Witchcraft*, has not the least Relation to it, since those Smells are involuntary, and affect necessarily the Odorat against the Animal's Will, and *Witchcraft* is voluntary, otherwise it is no *Witchcraft*. That of infectious Diseases being conveyed by Effluvia, &c. is not more to the Purpose, since those Effluvias cease the Mass of the Blood, commonly through Respiration, have no other Direction but what they receive from the Agitation of the Atmosphere, which they have most commonly infected first, nor any Determination for any Part of the Body in particular.

As to the *Witchcraft* *Virgil* complained of, which he calls *Fascination*, it was perhaps nothing but some natural Dimness in the Eyes of his Lambs, which a superstitious Pagan, as *Virgil* was, might very well attribute to some other extraordinary Cause.

The Basilisk and Opoblepa killing other Animals by only staring at them, if it be true, cannot be brought in Confirmation of *Witchcraft*; since those Animals being extremely venomous, and their Venom very subtile, flow with Impetuosity through their Eyes, finding no Passage so free in all the other Parts of their Body, and thereby is communicated to the other Animals; seizes immediately the Mass of the Blood, which it soon coagulates, whence Death ensues. The Fear which seizes the Partridge, naturally a very timorous Bird, at the Sight of the Setting-Dog, causes its Confusion, and not the Effluvia emitted from the Dog: Therefore neither can this be brought in Confirmation of *Witchcraft*.

Naude has published an Apology for all the great Men suspected of *Magic*.—*Agrippa* says, that the Words used by those in Compact with the Devil, to invoke him, and to succeed in what they undertake, are *Dis*, *Mies*, *Jesquet*, *Benedafet*, *Docovina*, *Enitemans*. There are an hundred other Formulas of Words, composed at Pleasure, or gathered from different Languages, or patched in Imitation of it.

Note, That the Origin of *Magic*, according to our first Definition, is ascribed to *Zoroaster*: *Salmassius* derives the very Name from *Zoroaster*, who, he says, was surnamed *Mag*, whence *Magus*.—Others, instead of making him the Author of the *Persian* Philosophy, make him only the Restorer and Improver thereof; alledging that many of the *Persian* Rites, in Use among the *Magi*, were borrowed from the *Jabii* among the *Chaldeans*, who agreed in many Things with the *Magi* of the *Persians*; whence some make the Name *Magus* common both among the *Chaldeans* and *Persians*. Thus *Plutarch* mentions, that *Zoroaster* instituted *Magi* among the *Chaldeans*, in Imitation whereof the *Persians* had theirs too.

The antient *Magi*, according to *Aristotle* and *Lactantius*, were the Authors and Conservators of the *Persian* Philosophy; and the Philosophy principally cultivated among them was Theology and Politics; they being always esteemed as the Interpreters of all Laws both divine and human, on which Account they were wonderfully revered by the People. Hence *Cicero* observes, that none were admitted to the Crown of *Persia*, but such as were well instructed in the Discipline of the *Magi*, who taught *τα βασιλικά* and shewed Princes how to govern.

Plato,

Plato, Apuleius, Laertius, and others agree, that the Philosophy of the *Magi* related principally to the Worship of the Gods, they were the Persons who were to offer Prayers, Supplications, and Sacrifices, as if the Gods would be heard by them alone.

According to *Lucian*, *Suidas*, &c. the Theology, or Worship of the Gods, about which the *Magi* were employ'd, was little more than the diabolical Art of Divination. So that *μαγεία*, strictly taken, signifies Divination.

Philo-Judeus describes the *Magi* to be diligent Enquirers into Nature, out of the Love they bear to Truth; and who setting themselves a-part for those Things, contemplate the divine Virtues the more clearly, and initiate others in the same Mysteries.

Their Descendants, the modern *Magi*, or Fire-Worshippers, are divided into three Classes; whereof the first and most learned, neither eat nor kill Animals, but adhere to the old Institution of abstaining from living Creatures.—The *Magi* of the second Class, refrain only from tame Animals; nor do the last kill all indifferently; it being the firm and distinguishing Dogma of them all, that *there is a Transmigration of Souls*. To imitate the Similitude between Animals and Men, they use to call the latter by the Name of the former; thus their Fellow-Priests they called Lions, the Priestesses, Lionesses, the Servants, Crows, &c.

Magic, according to our other Definition, is only used to signify an unlawful and diabolical Kind of Science, particularly the *superstitious* and *goetic Magic*, depending on the Assistance of the Devil and departed Souls. If any wonder how so vain and deceitful a Science should gain so much Credit and Authority over Men's Minds, *Pliny* gives the Reason of it: 'Tis, says he, because it has possessed itself of three Sciences of the most Esteem among Men; taking from it all that is great and marvellous in it. No Body doubts but it had its first Origin in Medicine, and that it insinuated itself into the Minds of the People, under Pretence of affording extraordinary Remedies. To these fine Premises, it added every Thing in Religion that is pompous and splendid, and that appears calculated to blind and captivate Mankind, particularly the *Oracles*, Men having always been very curious of Futurity; for,

ORACLE, was an Answer usually couched in very dark and ambiguous Terms, supposed to be given by Dæmons, either by the Mouths of their Idols, or by those of their Priests to the People, who consulted them on Things to come.

It is a pretty general Opinion among the more learned, that *Oracles* were all meer Cheats and Impostures; either calculated to serve the avaricious Ends of the Heathen Priests, or the political Views of the Princes.

M. Bayle says positively they were meer human Artifices, which the Devil had no Hand in. He is strongly backed by *Van Dale*, and M. *Fontenelle*, who have wrote expressly on the Subject.

There are two Points in Dispute on the Subject of *Oracles*, viz. whether they were human or diabolical Machines? and whether or no they ceased upon the Publication or Preaching of the Gospel?

Plutarch has a Treatise on the ceasing of some *Oracles*; and *Van Dale*, a Dutch Physician, has a Volume to prove they did not cease at the Coming of Christ; but that many of them ceased long before, and that others held till the Fall of *Paganism*, under the Empire of *Theodosius the Great*, when *Paganism* being dissipated, these Institutions could no longer subsist.

Van Dale was answered by a German, one *Mæbius*, Professor of Theology at *Leipsic*, in 1685, M. *Fontenelle* espoused *Van Dale's* System, and improved upon it in his *History of Oracles*, and shewed the Weakness of the Arguments cited by many Writers in Behalf of Christianity, drawn from the ceasing of *Oracles*.

F. *Balthus*, a learned Jesuit, has answered both *Van Dale* and *Fontenelle*. He labours to prove that there were real *Oracles*, and such as can never be attributed to any Artifices of the Priests or Priestesses; and that

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several of these became silent in the first Ages of the Church, either by the Coming of *Jesus Christ*, or by the Prayers of the Saints.

This Doctrine is confirmed by a Letter of Father *Bouchet*, Missionary, to Father *Balthus*; wherein it is declared, that what Father *Balthus* says of the antient *Oracles*, is experimented every Day in the *Indies*.

It seems, according to this Missionary, that the Devil still gives *Oracles* in the *Indies*, and that not by Idols, which would be liable to Imposture, but by the Mouths of the Priests, and sometimes of the By-standers. It is added, that these *Oracles* too cease, and the Devil becomes mute in Proportion as the Gospel is preached among them.

It was *Eusebius* who first endeavour'd to persuade the Christians, that the Coming of *Jesus Christ* had struck the *Oracles* dumb; though it appears from the Laws of *Theodosius*, *Gratian*, and *Valentinian*, that the *Oracles* were still consulted as low as the Year 385. *Cicero* says, the *Oracles* became dumb in Proportion as People growing less credulous, began to suspect them for Cheats.

Plutarch alledges two Reasons for the ceasing of *Oracles*; the one was *Apollo's* Chagrin, who it seems took it in Disdain to be interrogated about so many Trifles. The other was, that in Proportion as the Genii or Dæmons, who had the Management of the *Oracles*, died, and became extinct, the *Oracles* must necessarily cease. He adds a third and more natural Cause for the ceasing of *Oracles*, viz. the forlorn State of *Greece*, ruined and desolated by Wars. For hence the Smallness of the Gains let the Priests sink into a Poverty and Contempt too bare to cover the Fraud.

Most of the Fathers of the Church took it to be the Devil that gave *Oracles*; and looked on it as a Pleasure he took to give dubious and equivocal Answers; in order to have a Handle to laugh at them. *Vossius* allows, that it was the Devil who spoke in *Oracles*, but thinks that the Obscurity of his Answer was owing to his Ignorance, as to the precise Circumstances of the Events. That artful and studied Obscurity, wherein the Answers were couched, shewed the Embarrass the Devil was under; as those double Meanings they usually bore provided for their Accomplishment. Where the Thing foretold did not happen accordingly, the *Oracle* forsooth was misunderstood.

Eusebius has preserved some Fragments of a Philosopher, called *Ænomaus*, who out of Resentment for his having been so often fooled by the *Oracles*, wrote an ample Confutation of all their Impertinences.—'When we come to consult thee, says he to *Apollo*, if thou seest what is in Futurity, why dost thou use Expressions that will not be understood? dost thou not know that they will not be understood? if thou dost, thou takest Pleasure in abusing us; if thou dost not, be informed of us, and learn to speak more clearly. I tell thee that if thou intendest an *Equivoque*, the *Greek* Word where-by thou affirmed that *Cæsar* should overthrow a great Empire, was ill chosen, and that it could signify nothing but *Cæsar's* conquering *Cyrus*. If Things must necessarily come to pass, why dost thou amuse us with thy Ambiguities; what dost thou, Wretch as thou art, at *Delphos*; employed in muttering idle Prophecies?'

But *Ænomaus* is still more out of Humour with the *Oracle*, for the Answer which *Apollo* gave the *Athenians*, when *Xerxes* was about to attack *Greece*, with all the Force of *Asia*. The *Pythian* declared, that *Minerva*, the Protectress of *Athens*, had endeavoured in vain to appease the Wrath of *Jupiter*; yet that *Jupiter*, in Complaisance to his Daughter, was willing the *Athenians* should save themselves within wooden Walls; and that *Salamis* should behold the Loss of a great many Children, dear to their Mother, either when *Ceres* was spread abroad, or gathered together.

Here *Ænomaus* loses all Patience with the God of *Delphos*: 'This Contest, says he, between Father and Daughter, is very becoming the Deities! It is excellent that there should be contrary Inclinations and Interests in Heaven.—Pure Wizzard, thou art ignorant who the Children are that *Salamis* shall see perish, whether *Greeks* or *Persians*: It is certain they must be either

'one or the other; but thou needest not have told so openly, that thou knewest not which. Thou concealest the Time of the Battle under those fine poetical Expressions, *either when Ceres is spread abroad, or gathered together*; and wouldst thou cajole us with such pompous Language? who knows not that if there be a Sea-fight, it must either be in Seed-time or Harvest? It is certain it cannot be in Winter. Let Things go how they will, thou wilt secure thyself by this *Jupiter*, whom *Minerva* is endeavouring to appease. If the *Greeks* lose the Battle, *Jupiter* proved inexorable to the last; if they gain it, why then *Minerva* at length prevailed.'

For my Part I am of M. Fontenelle's Opinion, that the *Oracles* were nothing but meer Cheats, Frauds, and Impositions of the *Pagan* Clergy, to impose on the too great Credulity of Mankind, gain a certain Respect and Veneration from them, pick their Pockets, and render themselves absolutely necessary. For to believe that it was the Devil who used to speak in the Idols, is to arraign the Veracity of the true God, who says positively, that *he wills that all Men should be saved*. But to entertain the Heathens in their Ignorance, Impiety, and Idolatry, by the Ministry of the Devil speaking in the Idols, contradicts that positive Declaration of God, with Regard to the Salvation of all Men in general; therefore it is in my Opinion, blasphematory to say that there were real *Oracles*. If it be objected to this, that God suffer'd only the Devil to speak in the Idols, and that he is not obliged to undeceive us, if we will deceive ourselves; I'll answer, that the Devil speaking in the Idols, and

giving *Oracles*, could not be a single Tolerance; since the Devil being a pure spiritual Intelligence, the Nature thereof is only to form Ideas, without being capable to invest them with Words, since they have no Organs to articulate them; God must have operated a Miracle every Time an Oracle was pronounced, and therefore positively contributed towards deceiving Mankind, and thereby rendered their Reprobation of an absolute, or indispensable Necessity, which none can suppose without Impiety.

Oracle, is also used for the Dæmon who gave the Answer, and the Place where it was given.

The principal *Oracles* of Antiquity, were that of *Abacuchide* at *Didimus*; of the *Camps* at *Lacedæmon*; of *Didona*; of *Jupiter Ammon*; of *Nabarca*, in the Country of *Andriaca*, near the *Caspian Sea*; of *Trophonius*, mentioned by *Herodotus*; of *Chrysopolis*; of *Claros* in *Ionia*; of *Mallos*; of *Patarea*; of *Pela* in *Macedonia*; of *Phaselides* in *Cilicia*; of *Sinope* in *Paphlagonia*; of *Orpheus's Head*, mentioned by *Philostratus* in his *Life of Apollonius*, &c.

But of all others, the *Oracle* of *Apollo Pythius* at *Delphos*, was the most celebrated; this was consulted in the *Dernier resort*, by most of the Princes of those Ages.

The *Pythia*, which was to be a pure Virgin, was always in a Rage when she gave *Oracles*; at first she gave them in Verse, and fell at length to Prose, upon the People's beginning to laugh at the Poorness of her Versification.

M A G N E T.

MAGNET, *Magnes*, or *Load-Stone*, is a Sort of ferrugineous Stone, i. e. very near the Colour of Iron, but harder and more heavy, taken out of Iron-Mines; and sometimes in very large Pieces, half *Magnet*, and half Iron.

Note, That the *Magnet* borrowed its Name from *Magnesia*, a Province of *Macedonia*, where it is said to have been first found; according to this of *Lucretius*, lib. 6. *de rerum natura*, Verse 906.

— *Agere incipiam quo federe fiat
Naturæ lapis hic ut ferrum ducere possit,
Quem Magneta vocant patria de nomine Graii,
Magnetum quia sit patriis in finibus ortus.*

But *Nicanor*, in *Pliny's Natural History*, lib. 36. c. 16. says, that the *Magnet* borrows its Name from the Person who found it first. That a Shepherd, called *Magnes*, discovered it, while he was feeding his Flock on Mount *Ida*, by Means of his Crook, armed at the End with Iron, which resting on the Ground, he found fasten'd to a Piece of *Magnet*. That surprized at this extraordinary, and till then unheard of Phenomenon, he communicated it to others. Because it adhered to Iron, it was called by some *Siderites*, i. e. *Ferruginous*; and by others *Heracleos*, or *Herculean*, because the *Magnet* conquered Iron, as *Hercules* did Monsters. — Therefore the attractive Virtue of the *Magnet*, was the first discover'd; and is taken Notice of, besides, by *Lucretius* and *Pliny*, by *Plato*, *Aristotle*, lib. 1. *de Anim.* c. 2. and by *Orpheus* among the *Greek* Poets, and by *Claudian* among the *Latins*, in his Poem of the *Magnet*, where he speaks thus:

— *Lapis est cognomine Magnes.
Decolor, obscurus, vilis, non ille repexram
Casariem Regum, nec candida virginis orat
Colla; nec insigni splendet per cingula morsu:
Sed nova si nigri videas miracula saxi,
Tum superat pulchros cultus, & quicquid Eois
Indus litoribus rubra scrutatur in Alga.
Ex ferro vitam meruit, ferrique rigore
Vescitur: has dulces epulas hæc pabula novit.*

Note, also, That the best *Magnets* are those brought from *China* and *Bengal*, which are of an irony or sanguine Colour; those of *Arabia* are reddish, those of *Macedonia* blackish, and those of *Hungary*, *Germany*, *England*, &c. the Colour of unwrought Iron.

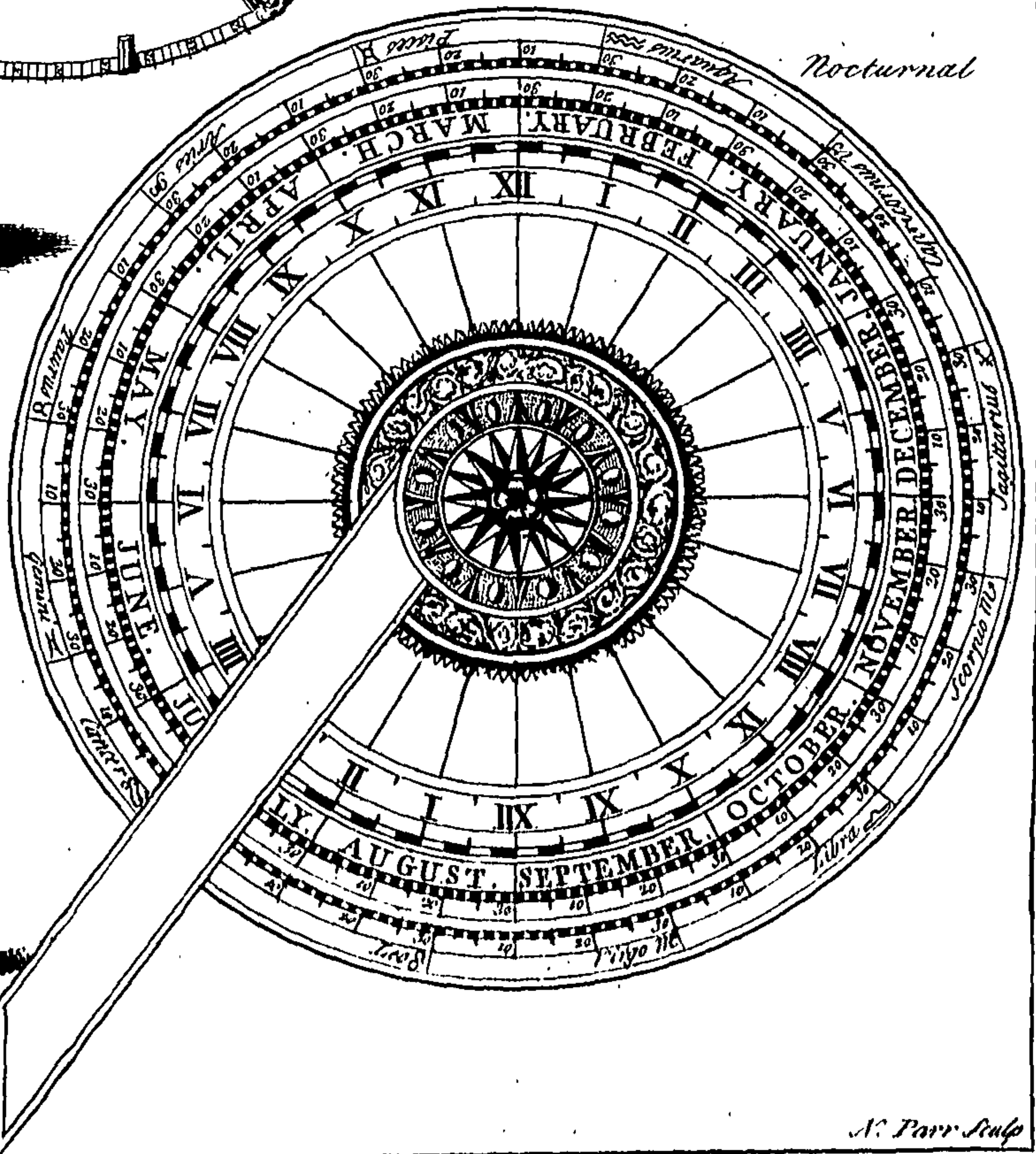
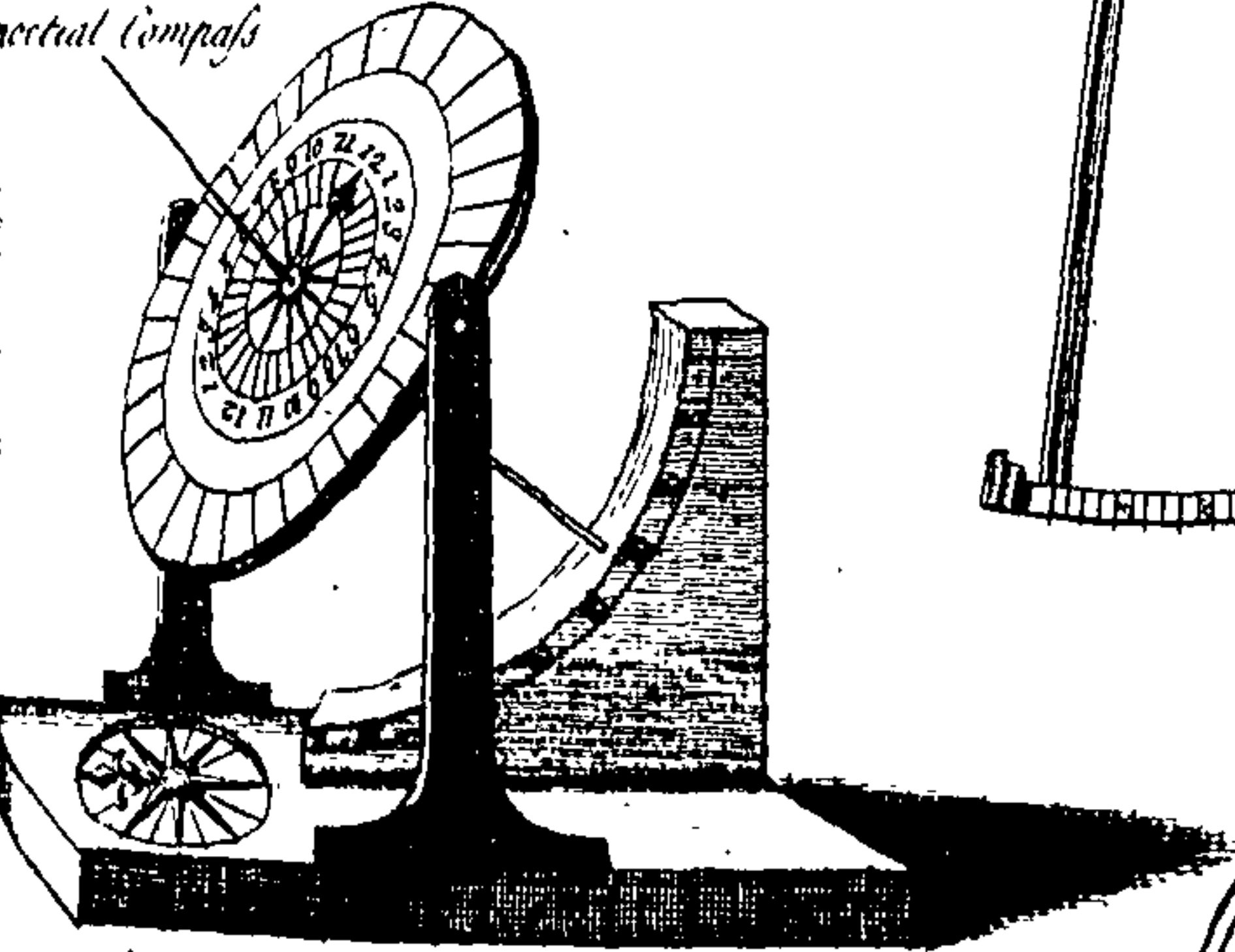
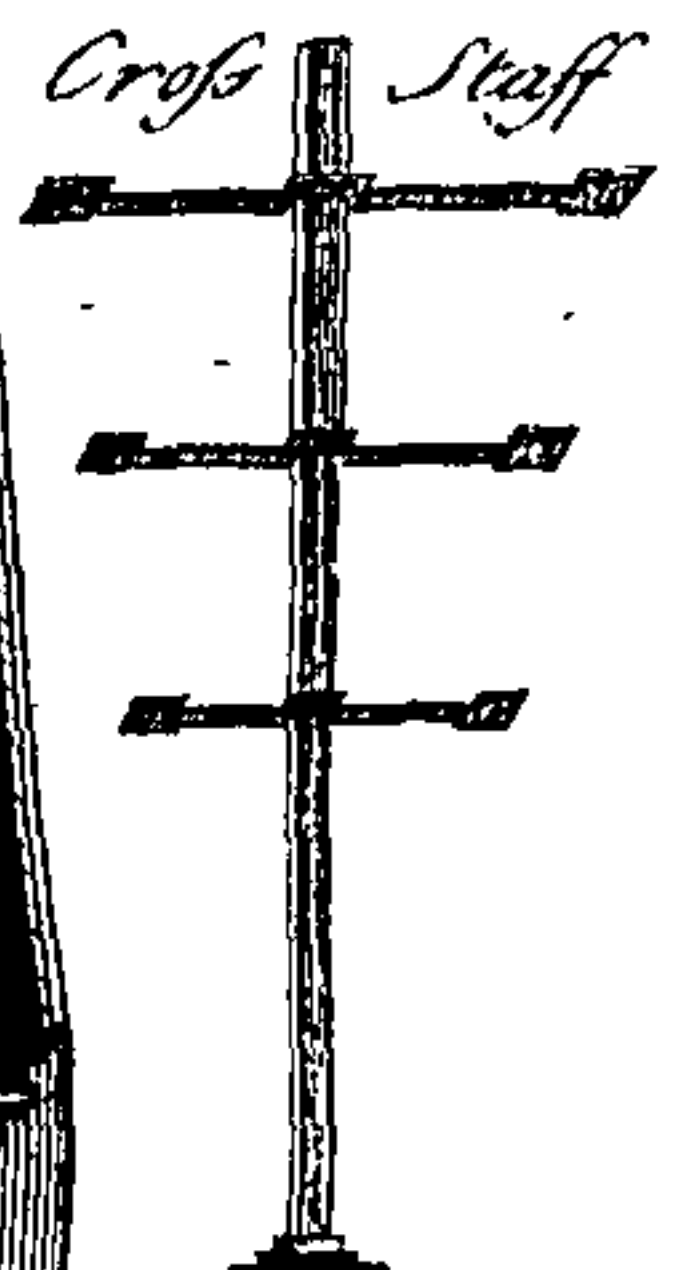
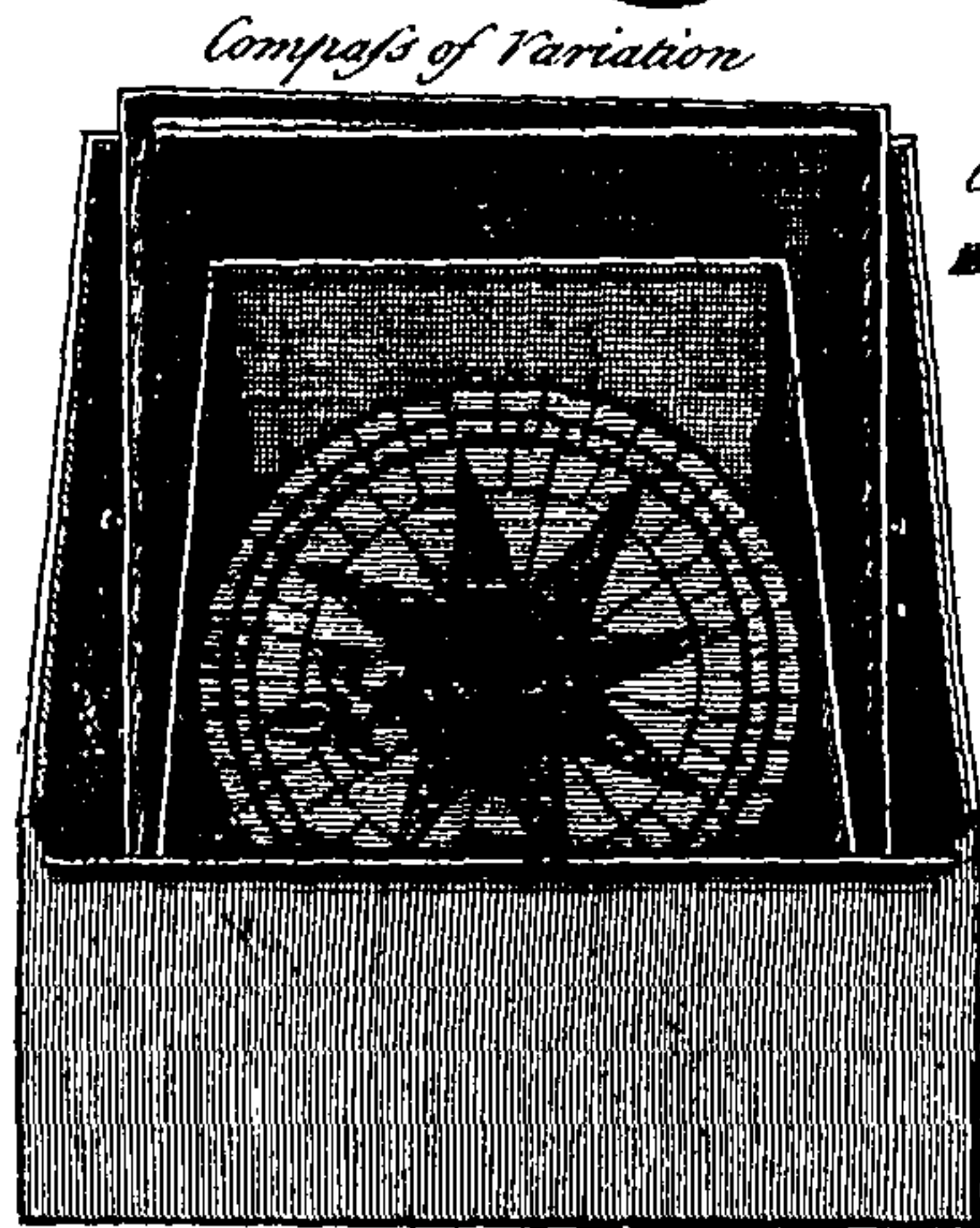
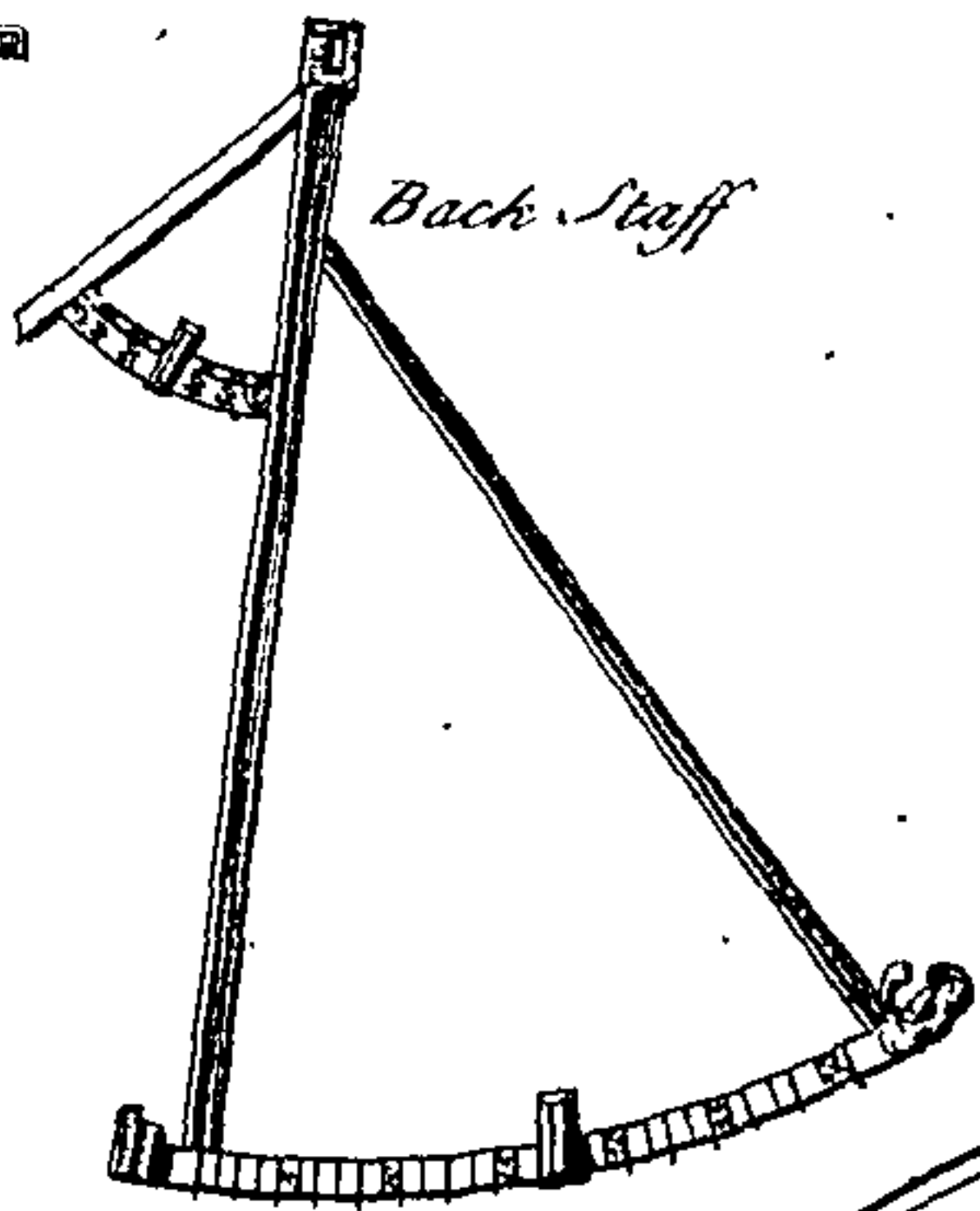
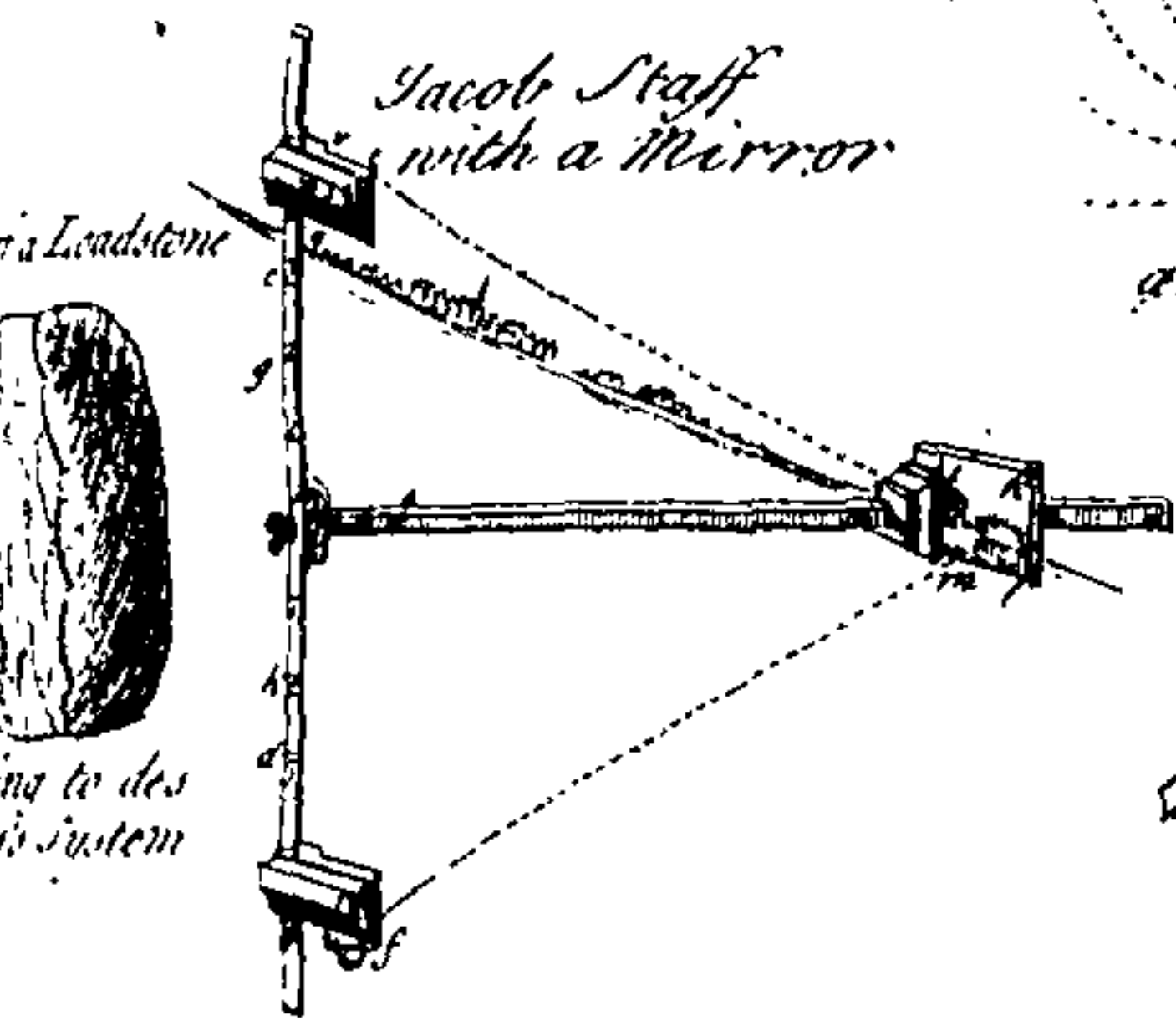
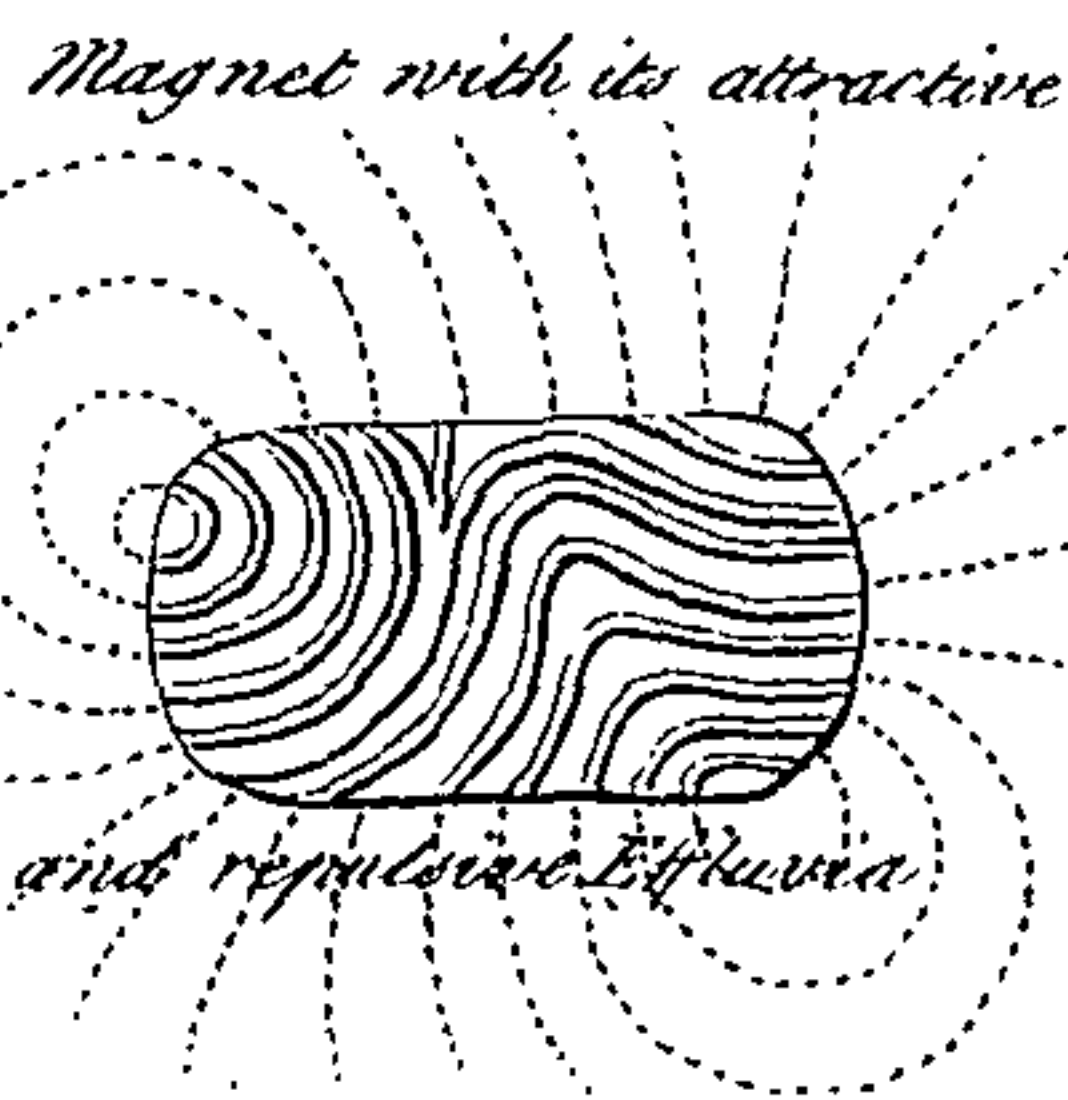
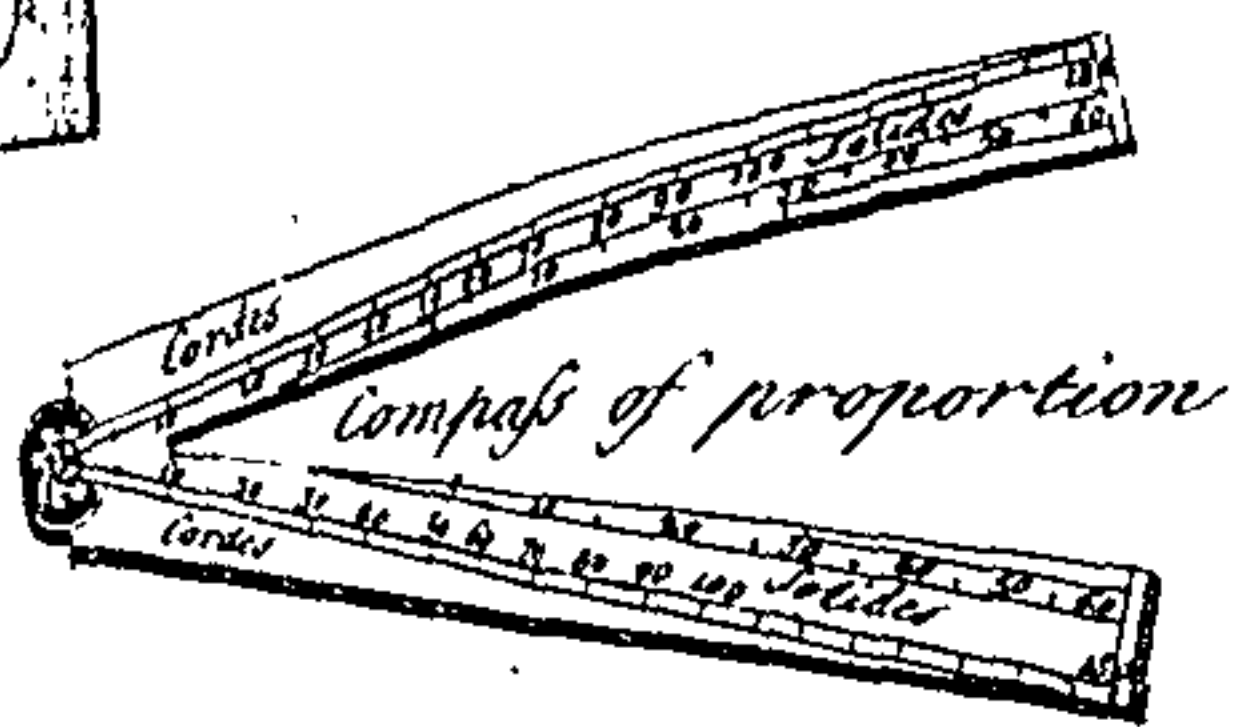
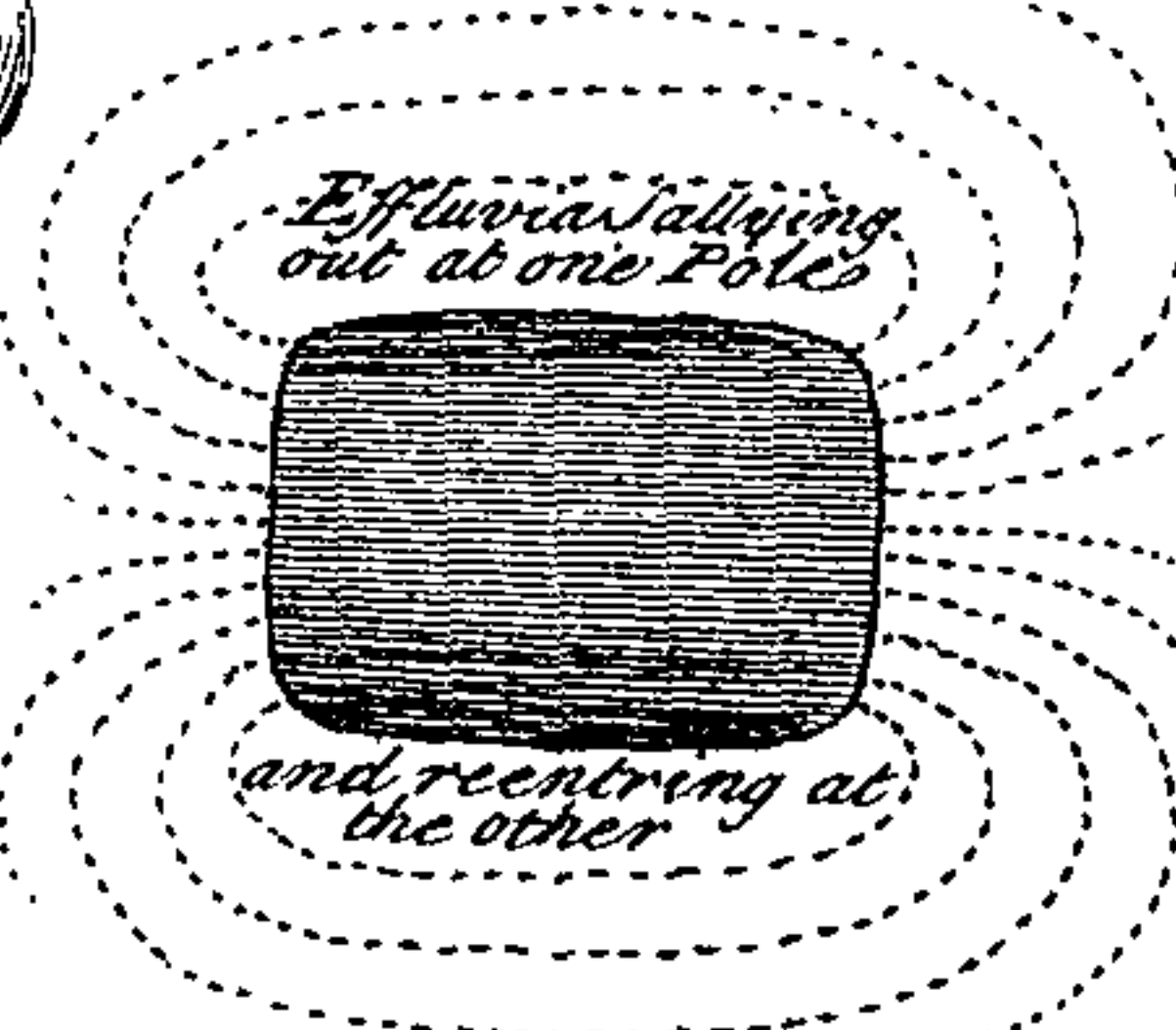
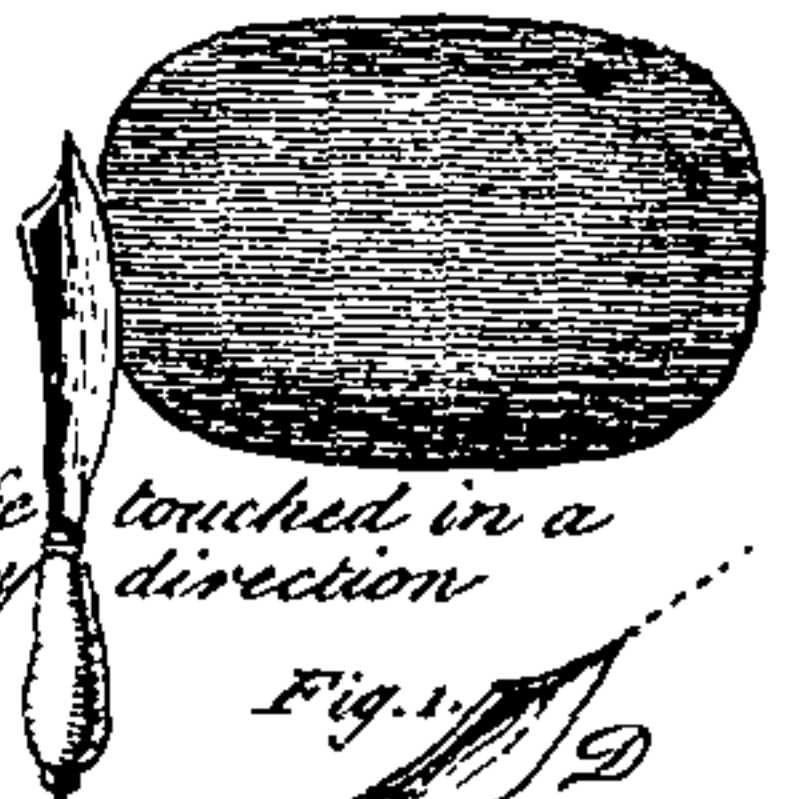
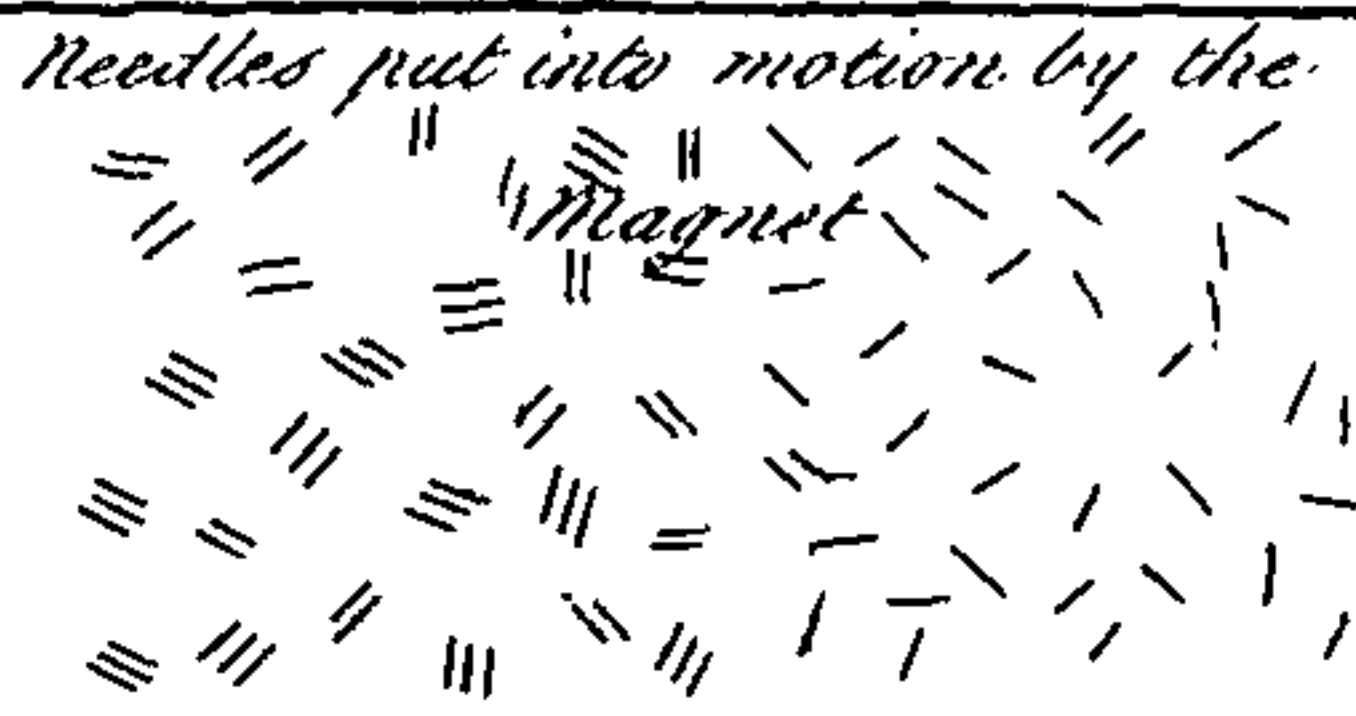
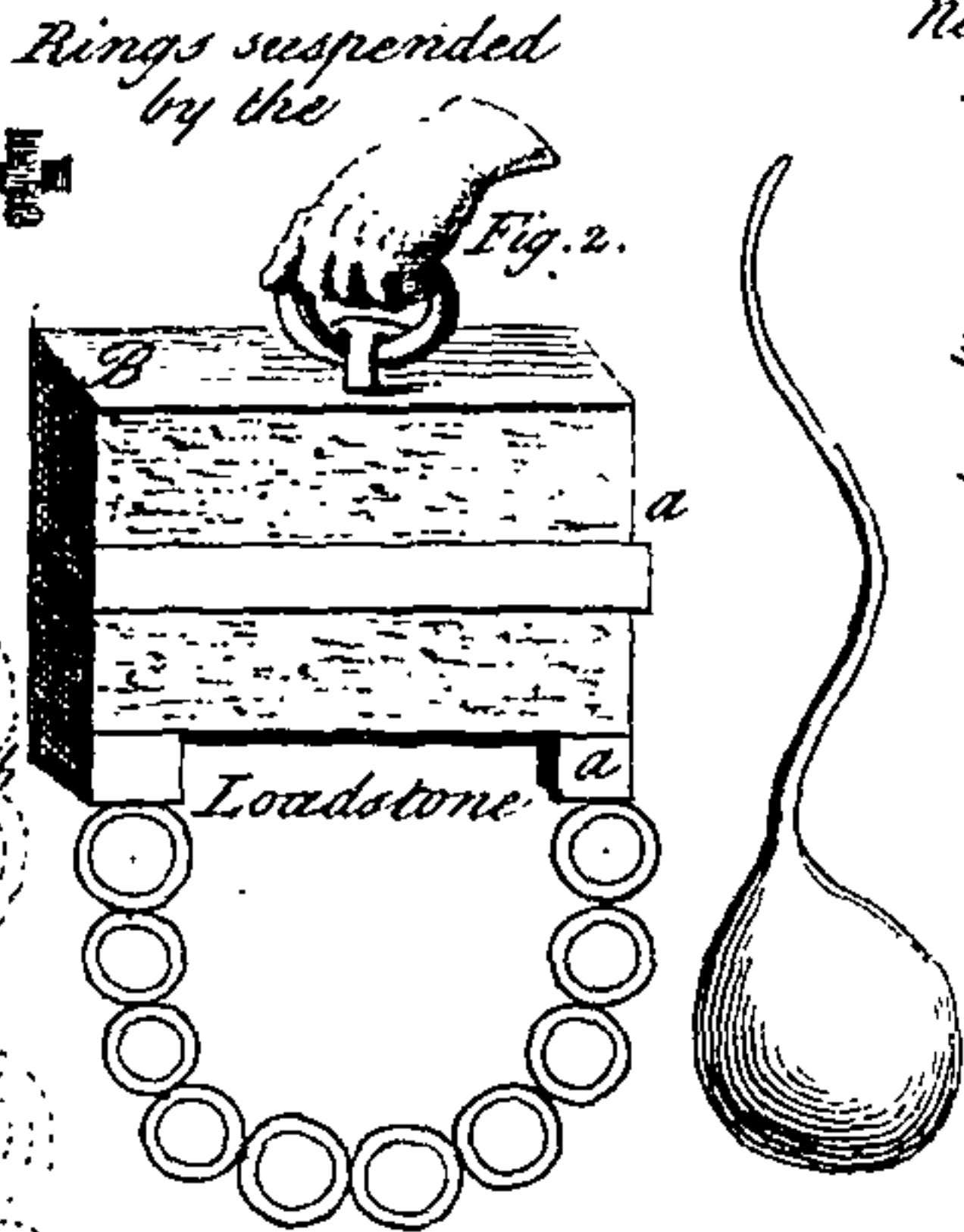
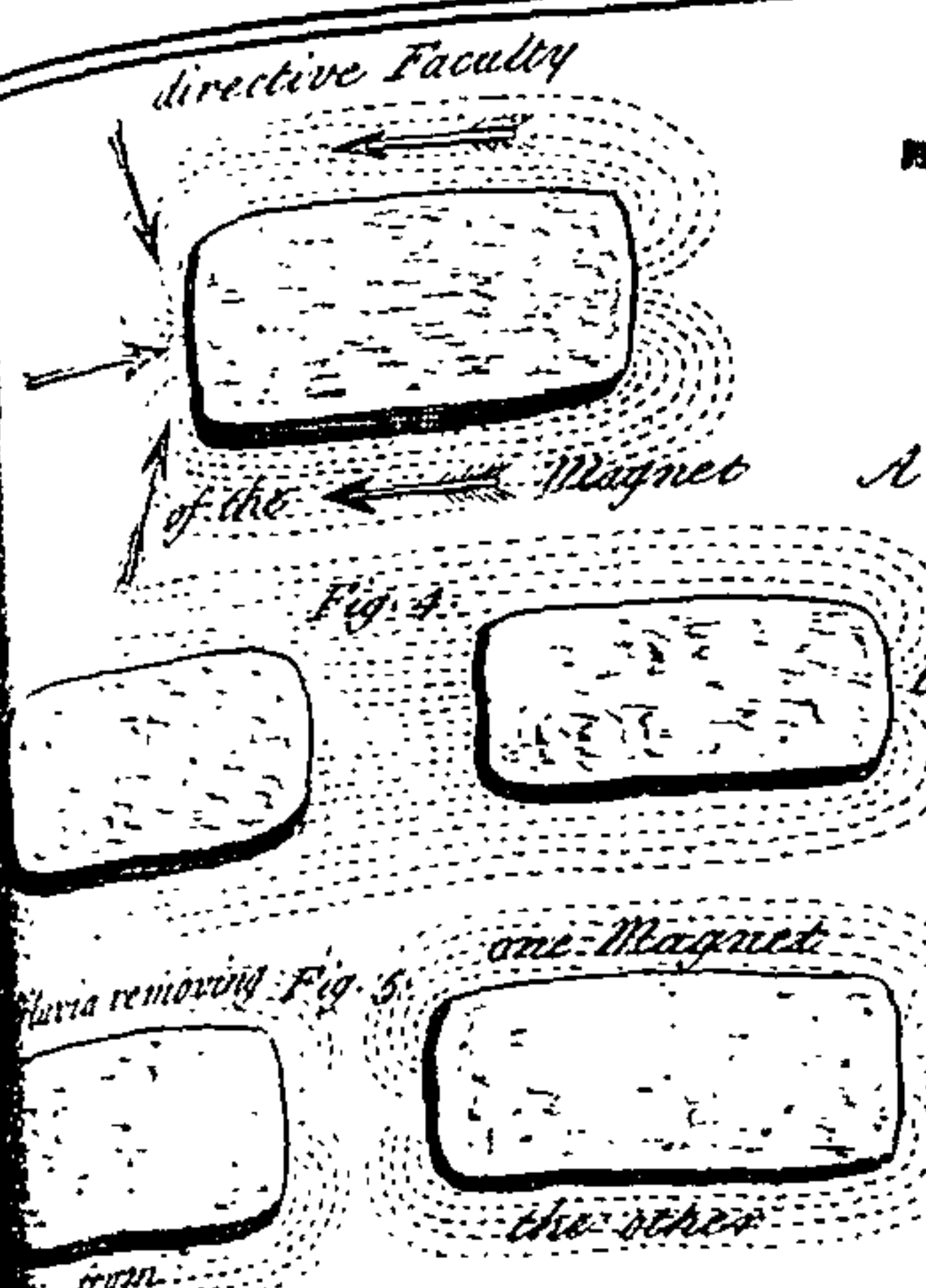
The Antients reckoned five Kinds of *Magnets*, different in Colour and Virtue; the *Ethiopic*, *Magnesian*, *Bæotic*, *Alexandrian*, and *Natolian*. They also took it to be Male and Female; but the chief Use they made of it was in Medicine, especially for the Cure of Burns and Defluxions on the Eyes. The Mariners, more happy, take it to conduct them in their Voyages.

The most distinguishing Properties of the *Magnet* are, as we have already observed, that it attracts Iron, and was that whereby it was discovered, and which surprized the most learned Philosophers of those Times; who after they had found that by placing a Piece of Iron at a certain Distance from the *Magnet*, that Iron quitted its Place to go and unite itself intimately with the *Magnet*, and that it was not without some Resistance, they were separated from their mutual Cohesion. To discover if the Attraction was reciprocal, some of them imagined, in order to render the Motion of the Stone easier, to put it in a small light Boat, and leave the Boat to float on the Water, while one of them held a Piece of Iron at a Distance from the Boat, whereby they found that the Boat floated towards the Iron, and the *Magnet* joined itself to the Iron.

This first Experiment occasioned another no less surprizing, viz. it was observed, that the *Magnet* left at full Liberty in the Boat, to chuse and direct itself towards the most commodious Place, and more proper to it, moved and directed itself always in the same Manner; whence it was concluded that it affected a particular Position in the World; for it turned one of its Sides towards that Part of the Horizon called the *North*, and the opposite to it towards the *South*; which are the two Places of the *Magnet*, which have been since called its *Poles*; and the right Line, which is supposed to pass from one Pole to the other, is called its *Axis*.

What caused a still greater Surprise was, when it was found

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found that the *Magnet* had that Property to transfer its Virtues above-mentioned to the Iron it touches, or is only placed at a certain Distance from it; so that a Piece of Iron touched by the *Magnet*, or placed very near it, has not only the same Virtue of attracting another Piece of Iron, but likewise of directing itself towards the same Parts of the World the *Poles* of the *Magnet* are directed: For Example, a Knife rubbed upon the *Magnet* acquires thereby the Virtue of attracting to itself Needles, Iron Nails, &c. and the Needle of a Sea-Compass turns towards the North and South, and denotes by its Extremities those two Places.

But there are certain Things on this Phænomenon worthy our Observation. The first is, that the Knife rubbed on the *Magnet* acquires a greater or lesser attractive Virtue, according to the Part of the *Magnet* it is rubbed upon. It receives the strongest Touch when it is drawn leisurely from the Handle towards the Point, over one of the Poles; for Example, if G be the *Magnet*, the Poles thereof are A and B, the Knife C D acquires the attractive Virtue it is capable of, by drawing it over the *Magnet* thro' the Longitude of the Line F E, fig. 1. so that that Part of the Knife nearest the Handle touches first the *Magnet*, and the Point last. The second is, that if that Knife thus in Possession of a strong attractive Power, be re-touched in a contrary Direction, viz. by drawing it from the Point towards the Handle, over the same Pole, it immediately loses all its Virtue.

The other Phænomena of the *Magnet* are as follows: We have already observed, that in every *Magnet* there are two Poles, one whereof points northward and the other southward; and if the *Magnet* be divided into ever so many different Pieces, the two Poles will be found in each Piece. These Poles in different Parts of the Globe, are differently inclined towards a Point under the Horizon; and though contrary to one another, help mutually towards the Attraction and Suspension of Iron. If two *Magnets* be spherical, one will turn or conform itself to the other, so as either of them would do to the Earth; and after they have so conformed or turned themselves, they endeavour to approach or join each other; but if placed in a contrary Position, they avoid each other. If a *Magnet* be cut through the Axis, the Parts or Segments of the Stone which before were joined, will now avoid and fly each other. If the *Magnet* be cut by a Section perpendicular to its Axis, the two Points, which before were conjoined, will become contrary Poles; one in one, the other in the other Segment. Iron receives Virtue from the *Magnet* by Application to it, or barely from an Approach near it, though it do not touch it; and the Iron receives this Virtue variously, according to the Part of the Stone it is made to touch, or even approach to; for if an Iron be any how applied to the Stone, it receives Virtue from it only as to its Length. The *Magnet* loses none of its own Virtue by communicating any to the Iron; and this Virtue it can communicate to the Iron very speedily, though the longer the Iron touches or joins the Stone, the longer will its communicated Virtue hold, and a better *Magnet* will communicate more of it, and sooner than one not so good; but the Virtue thus acquired by touching wears off by Degrees, and at last vanishes entirely, unless it be renewed from Time to Time by touching it anew. Steel receives from the *Magnet* better than Iron.

A Needle touched by a *Magnet* will turn its Ends the same Way towards the Poles of the World as the *Magnet* itself does; though neither itself nor Needles touched by it do conform their Poles exactly to those of the World, but have usually some Variation from them; and this Variation is different in divers Places, and at divers Times in the same Place. A *Loadstone* will take up much more Iron when armed or capped than it can alone. And though an Iron Key or Ring be suspended by the *Loadstone*, yet the *magnetical* Particles do not hinder that Ring or Key from turning round any Way, either to the Right or Left. The Force of a *Loadstone* may be variously increased or lessened by the various Application of Iron, or another *Loadstone* to it. A strong *Magnet* at the least Distance from a lesser or a weaker, cannot draw to it a Piece of Iron, adhering actually to such lesser or weaker Stone; but if it comes to touch it, it can draw it from the other; but a weaker

Magnet, or even a little Piece of Iron can draw away or separate a Piece of Iron contiguous to a greater or stronger *Loadstone*.

In these northern Parts of the World, the South Pole of a *Loadstone* will raise up more Iron than the North Pole. A Plate of Iron only, but no other Body interposed, can impede the Operation of the *Loadstone*, either as to its attractive or directive Quality. M. Boyle found it true in Glasses sealed hermetically, and Glass is a Body as impervious as most are to any Effluvia. The Power or Virtue of a *Loadstone* may be impaired by laying long in a wrong Position, as also by Rust, Wet, &c. and may be quite destroyed by Fire.

A Piece of Iron Wire well touched, will, upon its being bent round in a Ring, or coyled round on a Stick, &c. generally, quite lose its directive Virtue, but always have it much diminished; and yet if the whole Length of the Wire were not entirely bent, so that the Ends of it, if only for the Length of one Tenth of an Inch, were left strait, the Virtue will not be destroyed in those Parts, though it will in all the rest. This was first observed by Grimaldi and de la Hire; and is confirmed by the Experiments of Mr. Derham, who adds further, that though coyling or bending the Wire as above, would always destroy its Virtue by Day, yet it would not do it in the Evening. The Sphere of the Activity of *Magnets* is greater and lesser at different Times, in particular that reserved in the Repository of the Royal Society, will keep a Key or other Body suspended to another, sometimes, at the Height of eight or ten Feet; and at others not above four Feet. To which we may add, that the Variation of the *magnetical* Needle from the Meridian, varies at various Times of the Day, as appears from some Experiments of Mr. Graham. By twisting a Piece of Wire touched with a *Magnet*, its Virtue is exceedingly diminished, and sometimes so disordered and confused, that in some Parts it will attract and in others repel; and even in some Places, one Side of the Wire seems to be attracted, and the other Side repelled by one and the same Pole of the Stone. A Piece of Wire that has been touched being split or cleft in two; the Poles are sometimes changed, as in a cleft *Magnet*, the North becoming South, and the South North: And yet sometimes one Half of the Wire will retain its former Poles, and the other Half have them changed. To which it may be added, that laying one or other Side of the Half uppermost, causes a great Alteration in its Tendency or Aversion to the Poles of the *Magnet*. A Wire being touched from End to End with the same Pole of the *Magnet*, the End whereat you begin will always turn contrary to the Pole which touched it; if it be again touched the same Way with the other Pole of the *Magnet*, it will then be turned the contrary Way. If a Piece of Wire be touched in the Middle with only one Pole of the *Magnet*, without moving it backwards and forwards; in that Place will be the Pole of the Wire, and the two Ends will be the other Pole.

If a *Magnet* be heated red-hot, and again cooled, either with its South Pole towards the North in a horizontal Position, or with its South Pole downwards in a perpendicular Position, its Poles will be changed.

Mr. Boyle (to whom we are indebted for the following *magnetical* Phænomena) found he could presently change the Poles of a small Fragment of a *Loadstone*, by applying them to the opposite vigorous ones of a large *Magnet*. Hard Iron Tools well tempered, when heated to a brisk Attrition, as filing, turning; will, when warm, attract thin Filings or Chips of Iron, Steel, &c. but not when cold; though there are not wanting some Instances of their retaining the Virtue when quite cold. The Iron Bars of Windows, which have a long Time stood in an erect Position, grow permanently *magnetical*; the lower Ends of such Bars being the Northern Pole, and the upper the Southern. A Bar of Iron that has not stood long in an erect Posture, if it be only held perpendicularly, will become *magnetical*, and its lower End the North Pole, as appears from its attracting the South Pole of a Needle: But then this Virtue is transient, and by inverting the Bar the Poles will shift their Places. In order therefore to render the Quality permanent in an Iron Bar, it must continue a long Time in a proper Position.

Position: But the Fire will produce the Effect in a short Time: For as it will immediately deprive a *Load-stone* of its attractive Virtue, so it soon gives a Verticity to a Bar of Iron, if being heated red hot, it be cooled in an erect Posture, or directly North and South: Nay Tongs, and Fire-Forks, by being often heated, and set to cool again in a Posture nearly erect, have gained this *Magnetical* Property. Mr. *Boyle* found, that by heating a Piece of *English Oker* red-hot, and placing it to cool in a proper Posture, it manifestly acquired a *Magnetic* Virtue. And an excellent *Magnet* of the same ingenious Gentleman having lain near a Year in an inconvenient Posture, had its Virtue surprisingly impaired; and as if it had been by Fire.

A Needle well touched, it is known, will point North and South: If it have one contrary Touch of the same Stone, it will be deprived of its Faculty; and by another such Touch will have its Poles quite changed. — If a Bar of Iron have gained a Verticity by being heated red hot and cooled again, North and South, and then hammered at the two Ends, its Virtue will be destroyed by two or three small Blows on the Middle. — Either a *Magnet*, or a Piece of Iron being laid on a Piece of Cork, so as to swim freely in Water, it will be found, that which soever of the two is held in the Hand, the other will be drawn to it: In this Experiment if the *Magnet* be set afloat, it will direct its two Poles to the Poles of the World.

To account for all the above-mentioned Phænomena of the *Magnet*, according to both its *attractive* and *directive Faculty*, several Hypotheses have been invented at different Times, and by divers Philosophers, tho' none of them has been found satisfactory yet.

Cardan attributes the *directive Faculty* of the *Magnet* to the Polar Star: The University of *Conimbre*, to some Part of the Heavens, not very distant from the Pole: The common Scholasticks to an occult Quality, which God wills *should be the Subject of our Surprise, but above our Apprehension*. And the modern Philosophers, have Recourse to certain substantial Effluvia flowing from the Earth; which last Opinion is the most probable; tho' in the particular Explication of their several Opinions, a great Number of Difficulties occur, which are not very easily resolved.

Des Cartes, *part. 4. Princip.* from *num. 123.* to 183. explains the *Magnetical* Virtues by the striated or channelled Matter, which he supposes circulating round the Earth; which, he believes, proceeds from its general Hypothesis, or System of the World, I have explained in my Treatise of *Astronomy*.

Therefore, according to his Sentiment, when the Matter of the first Element passes through Lines parallel to its Axis, from the Pole of one Vortex to the Middle or Center, the triangular Spaces contained between the Globules of the second Element, it is formed into small Columns with three Channels; and turned round by the Motion of the whole Vortex, in the Manner of Necklaces. Whence *Des Cartes* observes, that those which issue out of the northern Pole are not twisted in the same Manner as those which flow from the southern Pole: Whence it happens, that those which have issued from one of the Poles of the Earth, cannot re-enter through the same Pole, but are forced by the Resistance of the ambient Air, and the continual flowing of the striated Matter near that Pole, to return by a certain Circumvolution to the opposite Pole.

Des Cartes imagines this Hypothesis very easy, and very proper to explain the Phænomena of the *Magnet*. But several Philosophers cannot believe that it is possible, that either the Necklace of the striated Matter, or the Channels or small Pipes in which they are moved, can always retain their striated Figure, without the Prominences of the Channels being wore off at last. For how is it possible, say they, that a continual Friction should not wear off the Channels: And how can the prominent Parts of the Beads be so aptly received into the striated Receptacles dug in the Channels, as never to stop in them, nor retard the Motion of the succeeding Holes; and be moved with no less Celerity, than if they were carried round their Axis with a direct Motion?

These Objections, and several others of the same Kind, have been made by the celebrated M. *Hugens*, a

Dutchman, to propose another Hypothesis, which several have imagined preferable to that of *Des Cartes*; though subject, likewise, to several very great Inconveniences.

Therefore he has admitted, that the Effluvia which continually flow from the Earth through Lines parallel to its Axis, penetrate one of the Poles of the *Magnet*, and running through Lines parallel to its Axis, come out at the opposite Pole: And as those Effluvia's are moved with a greater Facility, through the Meatus of the *Magnet*, than through those of the Air; they form a Vortex round the *Magnet*, in such a Manner, that they only enter it through one Pole, and come out of it at the other opposite Pole; which happens so, that the small Fibres or Threads, which are between the Meatus of the *Magnets*, not unlike those of Velvet, are depressed on one Part, by that Matter called the magnetick Effluvia, and consequently do not retard their Motion on that Part; but if by a contrary Motion the magnetical Matter was to attempt to flow from the opposite Pole of the *Magnet*, then the Fibres or Threads having reassumed their former Situation, would obstruct its Passage. Therefore in his Sentiment there are two Poles in the *Magnet*, one he calls the *Pole of Ingress*, and the other the *Pole of Egress*.

He calls the *Pole of Ingress*, that which the magnetical Effluvia enter; and the *Pole of Egress*, that which they come out at.

For while the *Magnet* was formed in the Mine, that Effluvia or magnetical Matter, which passes through the Earth, by Lines parallel to its Axis, from one Pole to the other, and returns by a perpetual Circumvolution, or vertical Motion from the Pole of *Egress* to that of *Ingress*; that Matter, says I, has disposed the Meatus of the *Magnet* in such a Manner, as to depress entirely the small Fibres in that Part through which it passes, as the Chaff in a Ear of Corn, is flattened in such a Manner on one Side, that it cannot be easily risen on the opposite.

Therefore those Fibres do not retard the Motion of the magnetical Matter from the Pole of *Ingress* to that of *Egress*, since they are bowed on that Part; but only opposes the *Egress* of that Matter through the same Meats, since they cannot be bowed on the opposite Part whatever Figure those Particles of the magnetical Matter may have contracted otherwise. And we are persuaded, that those Particles are greater than the subtile Matter which gives their Ponderosity to the Bodies, from that the Bodies placed in the Vortex of the *Magnet* lose nothing of their Ponderosity; therefore they are to be referred to the Matter of the third Element of *des Cartes*, and not to the Substance of the first Element.

There is one Thing in this Hypothesis, worthy our Notice, which is, that the Pole of the *Magnet*, which was the Southern Pole, while that Stone was yet in the Mine, must turn towards the northern Pole of the Earth, when dug out of the Mine. For though in this System, it does not very well appear which Pole of the Earth is to be called the Pole of *Ingress*, and which the Pole of *Egress*; it matters not, since it always succeeds in the same Manner: If notwithstanding for a greater Facility, the *Magnetical* Effluvia be conceived to enter the northern Pole of the Earth, they must likewise enter the northern Pole of the *Magnet*, turned towards that same Side of the Earth, while it is in the Mine; but as those Effluvia, which are supposed to be carried in the Center of the Earth, through Lines parallel to its Axis, from South to North, return from North to South, in the Circumference of the Earth; it is necessary that the *Magnet* dug out of the Earth, be placed in a contrary Position, to receive those Effluvia; and its southern Pole turned towards the northern Pole of the Earth, whence they flow. The same will happen if the northern Pole be considered as the Pole of *Ingress*, and the southern as the Pole of *Egress*.

This is the Hypothesis of M. *Hugens*, which though to be esteemed for its Simplicity, is notwithstanding attended with a great many Difficulties. For 1. It is uncertain in it which is the Pole of *Ingress*, and which the Pole of *Egress*, either in the Earth or in the *Magnet*; without which it is very difficult to establish it on a right Foundation.

dation, and to understand it well. 2. It is more probable, that the *magnetical* Matter enters, as it comes out, at both Poles without Distinction; since it seems to flow from the æthereal Matter. 3. It is more difficult to conceive in that Hypothesis, than in that of *Des Cartes*, why two *Magnets*, which turn their Poles of Ingress towards one another, recede into opposite Parts, &c.

For the *directive* Virtue of the *Magnet*, Mr. *Whiston* from the first, second, third, &c. Laws of *Magnetism*, inclines to think it mechanical; and ascribes it to *Magnetick* Effluvia, circulating continually round the *Load-stone*; of which Circulations he thinks there are evident Indications in *Magnetick* Experiments; as M. *Boyle* thinks there are of the *Magnetism*, or *Magnetick* Effluvia of the Earth; though those Effluvia were never yet rendered sensible, as electric Effluvia begin to be.

Note, That the Laws of *Magnetism*, from which Mr. *Whiston* deduces the *directive* Power of the *Magnet*, are as follows.

1. He supposes that the *Load-stone* has both an *attractive* and *directive* Power united together; whereas Iron touched by it has only the former, i. e. the *Magnet* not only attracts Needles or Filings of Steel, but directs them to certain different Angles, with Respect to its own Surface and Axis: Whereas Iron touched with it, does little or nothing more than attract them; still suffering them to lie along or stand perpendicular to its Surface and Edges in all Places, without any such special Direction.

2. That neither the strongest nor the large *Magnet*, give a better *directive* Touch to Needles, than those of a lesser Size or Virtue; to which it may be added, that whereas there are two Qualities in all *Magnets*, an *attractive* and a *directive* one; neither of them depend on, or are any Argument of the Strength of the other.

3. That the *attractive* Power of *Magnets*, and of Iron, will greatly increase or diminish the Weight of Needles on the Balance: Nay, will overcome that Weight, and sustain other additional Weight too. While the *directive* Power has much smaller Effect. That *Gassendi* indeed, as well as *Mersenus* and Dr. *Gilbert*, maintain it has not at all, but by Mistake; for Mr. *Whiston* found from repeated Trials on large Needles, that after the Touch they weighed less than before. One of 4584½ Grains, lost 2½ Grains by the Touch; and another of 65726 Grains Weight, no less than 14 Grains.

4. That the Quantity and Direction of *Magnetick* Powers communicated to Needles, is not properly after such Communication, owing to the *Magnet* which gave the Touch; but to the Goodness of the Steel which receives it, and to the Strength and Position of the terrestrial *Load-stone*, whose Influence alone those Needles are afterwards subject to, and directed by: So that all such Needles, if good, move with the same Strength, and point to the same Angle; what *Load-stone* soever (provided it be good) they were excited by. Nor does the Touch seem to do much more in *Magnetical*, than Attrition in electrical Cases, i. e. it serves to rub off some obstructing Particles, that adhere to the Surface of the Steel, and open the Pores of the Bodies touched, and so make Way for the Entrance and Exit of such Effluvia, as occasions or assists the Power we are speaking of. Hence Mr. *Whiston* takes occasion to observe, that the *directive* Power of the *Load-stone*, seems to be mechanical; and to be derived, as already mentioned, from *Magnetick* Effluvia, circulating continually round it.

But let it be how it will of those different Systems, with Regard to the *directive* Faculty of the *Magnet*, that of *Hugens* is, in my Opinion, preferable to all the rest, whereby I'll endeavour to explain the *directive* Faculty of the *Magnet*, and all its other Properties; by which Explication the Hypothesis of *Des Cartes* will be explained likewise; therefore,

The *directive* Faculty of the *Magnet* must be taken from the substantial Effluvia entering, by a perpetual Circulation, one Pole of the Earth, and coming out at the other; since by those substantial Effluvia, entering by a perpetual Circulation, one Pole of the Earth and coming

out at the other, the Direction of the *Magnet* towards the Poles of the Earth is rightly understood; those *Effluvia* being again moved through the same Meatus they had formed to themselves in the Mine. And this is confirmed not only by the Phænomena of the *Magnet* itself, but likewise by those of the Iron, the Nature whereof is much like that of the *Magnet*.

For, 1. Iron Rods which have been a long Time fixed on the Earth in a perpendicular Manner (as we have observed when we spoke of the Phænomena of the *Magnet*) acquire a *Magnetick* Virtue, whereby they direct themselves towards the Poles of the World. When any Iron Bar standing, for a considerable Time, perpendicularly in the Fire, has a *Magnetick* Power; and when applied to the Needle of a Sea-compass, attracts it to itself, on one Part, and repulses it on the other, as it happens in the *Magnet*; which cannot be understood unless by the substantial Effluvia, which flowing from the Earth incline the small Fibres of the Iron on that Part, towards which they are moved. For that Power is easier communicated to a hot Iron, and a little softened, than when it is cold and hard.

2. We can be persuaded that the *Magnet* borrows its *attractive* Faculty from the Earth, by the Inclination of the Needle of a Sea Compass. For if the Needle, which is placed in an Equilibrium in the Box of the Compass, be touched by the *Magnet*, presently the Part thereof, directed towards the North, beyond the Equinoctial Circle, in the northern Climates is depressed, and the opposite Part raised; because the Rays of the *Magnetick* Matter flowing from the Earth, and penetrating the Needle at its northern Part or Pole, are bowed arch-wise, as they are seen towards the Poles *a, b*, fig. 3. whence they force that Part to descend a little, therefore the Mariners commonly affix Wax to the other Part, to keep the Needle on a Level.

But if the same Mariners come under the Equator, where the Rays of the *Magnetick* Matter are carried in an almost direct Line, as it can be seen towards the Middle of the *Magnet*, *a, b*, fig. 3. the Wax must be taken off, and both Parts of the Needle will mutually keep one another in an Equilibrium. Lastly, if they pass beyond the Equator, the southern Part of the same Needle, which before tended upwards, will begin to incline downwards, or be depressed, and the Wax shall be affixed to the other Part; from which Experiment it is very well inferred, that the *directive* Power of the *Magnet* is to be attributed to the Effluvia flowing from the Earth.

3. The *Magnet* not only adapts itself to the Situation of the Earth, but must also be conceived as a certain *Terella*, or small Earth, having its Poles, Equator, and Meridians, according to Dr. *Gilbert's* Sentiment. For it has its Vortex or Atmosphere, which the farther it goes the weaker it is; which Vortex appears manifestly in Iron-filings, strewed round the *Magnet*; for those Filings are soon seen to dispose themselves in the Form of an Orb, from one Pole to the other, viz. from the Pole *a*, southern, to the Pole *b*, northern, fig. 3.

But as the *Magnetick* Substance enters through one Pole of the *Magnet*, and comes out at the other Pole; if the northern, or Pole of Ingress of one *Magnet*, be turn'd towards the southern or Pole of Egress of another *Magnet*; the Matter which flows from the one, will easily enter the other; whence the Iron-filings between both will be directed in right Lines, v. gr. if the Pole *a*, or southern of one *Magnet*, fig. 4. be turned towards the Pole *b*, northern of another *Magnet*, the Iron-filings thrown between both, will be soon directed in right Lines, and to form one and the same Vortex, around both *Magnets*.

But if the two Poles, which mutually regard one another, are both Poles of Ingress or Poles of Egress, or both northern or southern, fig. 5. then the *Magnetick* Effluvia will form two Vortices, and remove one *Magnet* from the other.

Hence it happens, that the *Magnet* put in a Silver or other Vessel, which is not Iron or Steel, and set a-floating on Water, if it inclines towards the northern Pole, and the southern Pole of another *Magnet* be applied to it, it presently will draw near it. For as the Matter which flows from one, can then easily enter the other; it will fill up the Space between both, in such a

Manner, as to expel almost all the Air from it, either course or subtile. Whence that Air, taking the *Magnet* backward, will force the one on the other, like the Water contained in a Syringe, is forced upwards by the Compression of the Air.

I say that the Air, either coarse or subtil, flowing between both *Magnets*, is expelled by the *Magnetick* Matter, and ranges itself on the Backside of the *Magnet*; for in the Pneumatick Machine, when the coarse Air has been pumped out, Iron is again joined to the *Magnet*, which is not to be attributed to the coarse Air alone, but likewise to the subtile Matter.

If the Poles of the *Magnet*, which mutually turn towards one another, be both Poles of Ingress, or both Poles of Egress; or both northern Poles, or both southern Poles, then the magnetick Matter will remove one *Magnet* from the other; for it forms two Vortices.

But if the Hypothesis of *Des Cartes* pleases best, it will be said, that the magnetick Globules which flow from the northern Pole, either of the Earth, or of the *Magnet*, cannot return through the same Poles, for the Reason heretofore given, but must necessarily return through the southern Pole; and *vice versa*. For it happens hence, that if the cognominal Poles be turned towards one another, *viz.* the Southern towards the Southern, or the Northern towards the Northern, the Globules which have flowed from the Pole of one *Magnet*, cannot pass the Pole of the other *Magnet*, nor *vicissim*. Therefore both *Magnets* will be repelled into opposite Parts. But if Poles of different Appellations regard one another, then the Globules, which have sallied out of the northern Pole of the one, will enter the southern Pole of the other; and *vicissim*. And thus will expel the Air contained between both *Magnets*; which, by a Sort of Circumvolution, gaining the back of one and the other *Magnet*, will join them both.

From these and the like Experiments it is easily inferred, that the directive Power of the *Magnet*, whereby it turns itself towards the two Poles of the World, is to be deduced from the substantial Effluvia flowing continually from the Earth, and not from an imaginary Quality, or from celestial Influences.

It may be objected, that if the Direction of the *Magnet* should proceed from certain substantial Effluvia, the Needle of a Sea-Compass, should always be directed towards the Poles of the World; which it does not always, since in several Places it declines from it; therefore, &c.

To this I answer, that the Needle should always be directed towards the Poles of the World, so as to not decline much from them; but not so as to not at all decline from them. Therefore the *Magnet* is said to be directed towards the Poles of the World, because if it does not always indicate them precisely, it notwithstanding does not recede much from it, which Recess from the Pole is called the *Declension of the Magnet*, and therefore the *Magnet* declines from the Pole, because the Ducts or Pores of the interior Earth, through which the magnetical Matter flows, are not precisely directed from North to South, but decline a little from the Poles; therefore the *Magnet* follows the same Direction, and receives a little from the Poles.

It is objected secondly, that if the magnetick Effluvia flowed from the Earth, the *Declension of the Magnet* should not change, as it often changes in the same Place. For at *Paris*, towards the Middle of the seventeenth Century, the Needle of a Sea-Compass, declined five or six Degrees towards the East: And in the Year 1684, declined 4 Degrees 10 Minutes towards the West, and was observed afterwards to decline only 3 Degrees towards the West.

I answer, that several various Mutations may happen in the subterraneous Places, *viz.* new Mines of Iron may be generated, whereby the magnetick Effluvia within the Earth are put out of their right Way, from the Pole of Ingress to the Pole of Egress, and consequently in the Air from the Pole of Ingress to that of Egress; as *Des Cartes* observes, *quart. part. princip. art. 168*. For those Effluvia are easier moved through Iron Veins than through the other Parts of the Earth. Hence the Needle of a Sea-Compass, by approaching Iron or the *Magnet* near it, declines towards the Iron or the *Magnet*:

Therefore it seems to be a Certainty, that the Power whereby the *Magnet* is turned towards the Poles, or towards the Parts nearer them, flow from the Earth near its Poles. Hence it is, that the Sea-Compass is of no Use in those Places nearer the Poles, because the magnetick Effluvia, which flow from the Pole of the Earth in an almost perpendicular Manner, do not direct the nautical Needle, more towards one Part of the Horizon than towards the other.

I'll explain the other Power of the *Magnet*, called attractive Power, whereby it attracts another *Magnet* or Iron in few Words. For we have shewn already the Reason why it attracts another *Magnet*, *viz.* when the Poles of a different Appellation are turned mutually towards one another, and the magnetick Matter flowing from one Pole continues its Motion through the Pole of the other, and occupies the Space between both *Magnets*; the Air expelled from that Place ranges itself backwards, and pushes the mobile *Magnet* towards the immobile one.

Very near the same Thing happens to Iron, with this Difference, that a *Magnet* attracts at one Part another *Magnet*, and expels it at the other; but attracts Iron at both Parts or Ends: Which Difference having not been observed by the Antients, they imagined that there were two Bodies, one whereof attracted Iron, which they called *Magnet*, and the other repelled it, which they called *Theamedes*. But though a *Magnet* at one Side attracts another *Magnet* to itself, and expels it at the other, it notwithstanding attracts Iron at both Ends.

The Reason of this Difference seems to consist, in that the small Fibres of the Iron are softer than those of the *Magnet*, and therefore the Poles of Ingress and Egress are easily changed in the Iron, but not in the *Magnet*, whose Fibres are harder, and where they are bowed in one Part, they cannot be easily brought over the other, unless the *Magnet* be weak or softened by Fire.

Therefore Iron runs to the *Magnet*, when the magnetick Matter, *viz.* that emitted from the *Magnet*, runs through it, and forces the Air, both coarse and subtil, contained between the Iron and the *Magnet*, to the Sides. Then the Air environing the Iron and *Magnet*, forces either the Iron towards the *Magnet*, or the *Magnet* towards the Iron: Therefore neither the *Magnet* attracts properly the Iron, nor the Iron the *Magnet*, but both are impelled mutually on one another. Therefore,

Iron is less judiciously said to be attracted by the *Magnet*, than impelled on it; since they are forced towards one another by the Impression of the Air; *viz.* when the Air, either coarse or subtil, which occupies the Space between the Iron and *Magnet*, is expelled by the magnetick Substance, and by a certain Circumvolution ranges itself at the Back of the *Magnet* and Iron, and forces them towards one another, as already observed.

Besides, we have no clear and distinct Idea of Attraction, unless it be joined with Impulsion: *v. g.* When a Horse draws a Cart, it is compelled to it by the Harness which is on his Back. Likewise, when we are said to draw something with our Arm, the animal Spirits which circulate thro' the Nerves, distending the Muscles, moves the Arm by a true Impulsion. In a Word, there seems to be no Attraction in Nature, but according to a common Opinion; therefore it is better to explain the Conjunction of the Iron with the *Magnet*, by some Impulsion, than by Attraction.

It may be objected, that it is not possible that the Air expelled by the magnetick Substance, should have Strength enough to join the Iron, or *Magnet*, to another *Magnet*.

I answer, that the Air expelled from the Space which was between the *Magnet* and the Iron, or between both *Magnets*, takes off the Equilibrium of the whole Volume of Air: Whence the Compression thereof becomes unequal towards the Iron or *Magnet*, and therefore where the Pressure is less, there the *Magnet* or Iron is moved.

It is objected, secondly, that if the Iron runs to the *Magnet*, because moved by the Impulsion of the Air, no Reason can be assigned why the *Magnet*, armed at both Poles with Steel, draws up a Weight ten Times bigger

bigger than before; for it cannot be said, that thus armed, a greater Quantity of Effluvia flows from it.

I answer this in the Negative; for when the *Magnet* is armed at both Poles with polished Steel, as *fig. 2.* then the magnetick Effluvia flow with a greater Facility towards the Pole, *v. g.* the northern *A*, through the Steel between *A* and *a*, than through the Air. Likewise on the other Part, it is easier moved between *B* and *b*, than in the Air; and therefore form a Vortex, whereby Iron-Rings, disposed in a Semi-circle, are suspended. Whence, if in Lieu of Rings a Piece of Iron be applied to the two Extremities of the Steel, *viz. a* and *b*, that Iron will be sustained by the Force of both Poles; whereas if it was not armed, it would only be sustained by one, *viz.* either the Northern or Southern: Wherefore the magnetick Virtue acquires a considerable Increase by the *Magnet* being armed. But if the Steel wherewith the *Magnet* is armed be rusty, so as to hinder the magnetick Matter moving thro' it with Ease, then the magnetick Virtue acquires but little Increase. When

a Piece of Paper is put between the Armature, and the Iron which is to be attracted, the Paper hinders the *Magnet* from having more Virtue than if it was not armed; because it does not touch the Iron with more Parts than if it was not armed.

Hence it appears, why Iron suspended in the Air between two *Magnets*, one whereof is stronger than the other, adheres sometimes more to the weaker than to the stronger; because it happens then, that it touches the weaker with more Parts than the stronger.

The *Magnet* has a third Virtue, called *communicative*; whereby it induces the Steel or Iron it touches with its Virtue or Power: So that the Iron or Steel directs itself towards the Poles of the Earth, and attracts another Iron: Which Virtue is likewise to be deduced from the magnetick Effluvia.

By Means of the same Effluvia, can be explained the magnetick Virtues of the Ember or Succinum, Wax, Glass, &c.

MAHOMETANISM.

MAHOMETANISM, or MAHOMETISM, is the System of Religion broached by *Mahomet*, and still adhered to by his Followers.

The Impostor *Mahomet*, Inventor of *Mahometanism*, and from whom it borrows its Name, was born in *Arabia Felix*, and his first Employment was that of Groom of a Stable. He had neither Wit nor Knowledge, not so much as to know how to read or write. He enter'd into the Service of a Widow extremely rich, and had Craft enough to engage her to marry him, after he had debauched her. During this Marriage he was subject to epileptick Fits, that were very violent, which his Wife supported with much Impatience. But to appease her, he made her believe that the Angel *Gabriel* appeared often to him, and that his Presence caused those Convulsions. There was a detestable Monk called *Sergius*, who had been expell'd from his Monastery, because he professed *Arianism*. This Woman communicated to him what *Mahomet* had told her, and the Wretch confirm'd her in the Belief of that Apparition; assuring her, that *Mahomet* was a Prophet. She told this to her Female Neighbours, who told it to their Husbands; and thus in a very short Time it was rumoured abroad that *Mahomet* had Communication with the Angel *Gabriel*. This finding that his Imposture had gained a Belief among the Populace, invented new Dreams, which he said were revealed to him by his Angel.

Among other Things, he published a Book under his Name, which *Sergius* composed full of Follies, which notwithstanding he pretended he had received from Heaven; and which he dispersed among the Inhabitants of the Country, who were Fools enough to add Faith to it. The *Jews* seeing that he taught and practised Circumcision, were the first that joined with him; but having discover'd that he did eat Meats, reputed unclean in their Laws, they were undeceived, and forsook him; notwithstanding which, they continued to animate and encourage him against the Christians.

At last, to engage all Men, if he could, to embrace his Sect, he composed, or rather the Monk *Sergius* for him, his new pretended Religion, from all other Religions which had Course in the World; and borrowed from that of the *Jews*, the Doctrine of one only God, Abstinence from Swines Flesh, and Polygamy. To deceive the Christians, he spoke honourably of *Jesus Christ*; teaching, that he was the Son of a Virgin, and a great Prophet; as also the Word of God, but inferior to God and his Servant, in which he agreed with the *Arians*: That the *Jews* thought they had crucified him, but had only crucified his Shadow, that he had fled from their Hands, and ascended into Heaven; where God having asked him, if he had called himself his Son? he declared to him, that he had never pronounced such an Impiety.—He ordered a Sort of Lent, and recommended much the Use of Prayer and Alms.—He

taught with the Pagans, the unavoidable Necessity of Fate, which served to render his Partisans intrepid in the greatest Dangers; as being persuaded, that if they were to be killed in a Battle, it was not in their Power to avoid Death; and if they were to escape, nothing was capable to kill them.—He promised to those who should embrace his Law, a Paradise entirely carnal, full of Women, perfectly handsome, and who were to be always Virgins, and likewise of handsome Boys, to gratify their Brutality, and where they should be continually feasted.—He mixed also with those Dreams, and Impieties, a Kind of Worship for the Moon, to gain the Favour of the Gentiles.

Therefore the first Article of the *Mahometan Creed*, is, *that there is no other God but God*; which they have from the *Alcoran*, where these Words are incessantly repeated: *There is no other God but him. Your God is the only God. I am God, and there is no other God but me.*—This grand Axiom of their Theology, seems to have been taken from the *Jews*, who were continually rehearsing those Words in *Deuteronomy*, *Hear, O Israel, the Lord our God is one.*

For this Reason the *Mahometans* account all such as own any thing of Number in the Divinity, to be Infidels, or Idolaters: And accordingly one of the first Lessons they teach their Children, is, that God is neither Male nor Female, and consequently can have no Children.

The second Article, is, *that Mahomet was sent from God*, by which they exclude all other Religions, under Pretence, that their Prophet was the last and greatest of all the Prophets that God would ever send; and that as the *Jewish* Religion ceased with the Coming of the *Messiah*, so likewise the Christian Religion was to be abrogated with the Coming of *Mahomet*.

These are the two Fundamentals of *Mahometanism*; so that when any is to make Profession of that Faith, they content themselves with their rehearsing these Words, *There is no other God but God, and Mahomet is his Envoy or Prophet.*

To these Articles the *Mahometans* have added that of Bathing or Purification, in Imitation of the *Jews*. And such an Opinion have they of these Purifications, that it is purely on that Account they seem to have retained the Practice of Circumcision. For they pretend with the *Jews*, that if the least Part of the Body remained unwashed, the Bathing is of no Effect. Hence they find themselves under a Necessity of being circumcised; that the Part covered by the Prepuce, may also have its Share in the Lotion.

As to Prayer they perform it five Times a Day, to distinguish themselves from the *Jews*, who only do it thrice. Some of their Periods or Hours of Prayer they hold to be necessary, and of divine Obligation, others they esteem convenient and prudential: That at nine o'Clock

o'Clock in the Morning they do not esteem necessary; but those at Noon and in the Afternoon are held to be *Jure Divino*. They are obliged to observe an Infinity of Things in order to be heard. If they speak or smile in praying, their Prayers are vain: And it is the same Thing if they weep, unless it be with the Thought of Paradise or Hell: In many Prayers they use Beads.

The *Mahometans* believe with the Christians and *Jews*, the Resurrection of the Dead. They hold that ere that Time an *Anti-Mahomet* will come; and that *Jesus Christ* will descend from Heaven to kill him, and establish *Mahometanism*: To which they add a great many more Chimeras relating to *Gog* and *Magog*, and the Beast that is to come out of *Mecca*. The Mountains are to fly in the Air like Birds, and at last the Heavens will melt and drop down upon the Earth. They add however, that some Time after God will renew and re-establish the Earth, that then the Dead will be raised.

As to their *Fasting*, they are so scrupulous on that Point, that they will not so much as take the Smell of any Perfume by the Nose: They hold, that Odors themselves break *Fast*; if they bathe it is forbid to put the Head under Water for Fear of swallowing any of it; and as for Women they are forbid to bathe at all on Fast-Days, for a Reason peculiar to the Sex. Their great Fast or Lent is called *Ramazán* or *Ramadan*, during which they fast all Day and feast all Night.

The *Turks* are commonly very charitable, from the Prince to the meanest of the Subjects. The Grand Seignior seldom undertakes any Project of Consequence, before he has made his *Corban*, which is a Slaughter of a great Number of Sheep, which is afterwards distributed to the Poor, hoping by those Alms to render Heaven propitious to his Enterprize. The Grand Vizier, and all the other Officers of the Empire, most commonly follow on such Occasions, in Proportion to their Abilities the Sultan's Example.

All the Revelations, Doctrine, and Prophecies of the pretended *Mahomet*, are contained in the Book called *Alcoran*, in a very confuse and undigested Manner.

The Word *Alcoran* is Arabick, and literally denotes either Reading or Collection; but it is in the first of these Senses that the *Alcoran* of *Mahomet* seems best understood: *Mahomet* purposing to have his Book called *Reading*, by way of Eminence, in Imitation of the *Jews* and Christians, who call the New and Old Testament *Writing*, *Scripture*, on the same Account.

The *Turks* also call it *Alforkan*, from the Verb פָּרַק *Pharaka*, to divide or distinguish; either by reason it makes the Distinction between what is true and false, or between what is lawful to do and what not; or else on Account of its containing the Division or Heads of the Law; in which again they imitate the *Hebrews*, who give divers Books the like Name פָּרָקִים *Perakim*, q. d. *Capita*, *Capitula*, Chapters, Heads.—Lastly, the *Alcoran*, is also denominated *Aldbicbr*, Advertisement or Remembrance, as serving to retain or retrieve the Knowledge of the Law.

I have already observed, that it is the common Opinion among the Christians, that the abominable Monk *Sergius* composed this infamous Book for *Mahomet*, but the *Mahometans* believe it as an Article of their Faith, that the Prophet, who, they say, was an illiterate Man, had no Hand in it, but that it was given him by God, who to that End made use of the Ministry of the Angel *Gabriel*; that however it was communicated to him by little and little, a Verse at a Time, and in different Places, during the Course of 23 Years. And 'hence, 'say they, proceeds that Disorder and Confusion visible 'in the Work'. Which in Truth is so great, that all their Doctors (if illiterate Fellows can be called by that Name) have never been able to adjust it. For *Mahomet*, or rather his Copist, having put all these loose Verses promiscuously in a Book together, it was impossible ever to retrieve the Order wherein they were delivered.

Those 23 Years which the Angel employed in conveying the *Alcoran* to *Mahomet*, are of wonderful Service to his Followers, inasmuch as they furnish them with an Answer to such as tax them with those glaring Contradictions wherewith the Book is full: Those Contradictions they piously father upon God himself, al-

ledging, that in the Course of so long Time, he repeated and altered several Doctrines and Precepts, which the Prophet had before received of him.

M. *d'Herbelot* thinks it probable, that when the Heresies of the *Nestorians*, *Eutychians*, &c. had been condemned by Œcumenical Councils, many Bishops, Priests, Monks, &c. being driven into the Deserts of *Arabia* and *Egypt*, furnished the Impostor with Passages, and crude ill-conceived Doctrines of the Scriptures: And it was hence that the *Alcoran* became so full of the wild and erroneous Opinions of those Hereticks.

The *Jews* also, who were very numerous in *Arabia*, contributed their Quota to the *Alcoran*; nor is it without some Reason that they boast, twelve of their chief Doctors, to have been the Authors of this detestable Work.

The *Alcoran*, it is to be observed, while *Mahomet* lived, was kept in loose Sheets: His Successor *Abubeker*, first collected them into a Volume, and committed the Keeping thereof to *Haphsa*, the Widow of *Mahomet*, in order to be consulted as an Original. And there being a good deal of Diversity between the several Copies already dispersed throughout the Provinces: *Ottoman*, Successor of *Abubeker*, procured a great Number of Copies to be taken from that of *Haphsa*; at the same Time suppressing all the others not conformable thereto.

The chief Differences then, in the Copies of this Book, consist in the Points; which were not in Use in the Time of *Mahomet* and his immediate Successors, but were added since, to ascertain the Reading; after the Example of the *Massoretes*, who put the like Points to the *Hebrew* Text of the Scripture.

The Work is divided into *Suras* or Chapters, and the *Suras* sub-divided into little Verses, which are all composed in a broken interrupted Style, resembling Prose rather than Verse. The Division into *Suras* is but of late standing: The usual Number of them is sixty.

There are seven principal Editions of the *Alcoran*, two at *Medina*, one at *Mecca*, one at *Cousa*, one at *Bassora*, one in *Syria*, and the common Edition. The first contains 6000 Verses, the others surpassing this Number by 200, or 236 Verses; but the Number of Words and Letters is the same in all, viz. 77,639 Words, and 323,015 Letters.

The Number of Commentaries on the *Alcoran* is so large, that only the bare Titles would make a large Volume.—*Ben Oshair* has wrote the History thereof, intitled, *Tarikh Ben Oshair*: The principal among them are *Reidhaori*, *Thaalebi*, *Zamelchschari*, and *Bacai*.

Besides the *Alcoran*, which is the Basis of the *Mahometan* Faith, they have also a Book containing their Traditions, which they call *Sonna*; which Word signifies, in *Arabick*, the same with *Mishna* in the *Hebrew*; that is second Law, or as the *Jews* call it *Oral Law*.

The Adherents to the *Sonna* are called *Sonmites*; and as among the *Jews* there is a Sect of *Caraites*, who reject the Traditions as Fables invented by the *Rabbins*; there are also Sectaries among the *Mahometans*, called *Shiites*, who reject the Traditions of the *Sonmites*; as being only founded on the Authority of an Apocryphal Book, and not derived to them from their Legislator.

There is the same Enmity between the *Sonmites* and *Shiites*, as between the *Rabbins*, *Jews*, and the *Caraites*. The *Shiites* reproach the *Sonmites*, with obtruding the Dreams of their Doctors for the Word of God; and the *Sonmites* in their Turn treat the *Shiites* as Hereticks, who refuse to admit the divine Precepts, have corrupted the *Alcoran*, &c.

The *Mahometans* have a positive Theology, built on the *Alcoran* and Tradition, as well as a scholastical one built on Reason. They have likewise their *Casuists*, and a Kind of Canon Law, wherein they distinguish between what is of divine, and what is of positive Right.

The sovereign Interpreter of the *Alcoran*, and Chief or Patriarch of the *Mahometan* Religion, is called *Muphti*, or *Mufti*; he decides all Questions of the Law, takes Place of the *Bashaws*, and his Authority is often terrible to the Grand Signior himself; whom he can call to an Account by his *Fetfa's* or *Bulls*, and even depose of his own Authority. For as the *Turks*, as well as some other Nations, want sometimes to cover their Rebellion with

the Cloak of Religion, they have Recourse to the *Muphti's* holy Craft to give a Sanction to it; who, according to the Levitical Genius, seldom refuses to have a Hand in so good a Cause. The unhappy *Ibrahim*, was deposed and murder'd, by the Authority of the *Muphti*, and by a Principle of Religion, much about the Time, that excellent Prince, the unhappy *Charles I.* was murder'd in *England*, by the same Principle of Religion. From these Sorts of Religions, *Good Lord deliver us.*

It is the *Muphti* that girds on the Sword to the Grand Signior's Side, which Ceremony answers to the Coronation of our Kings.

The *Mahometans* have also their Beneficiaries, Chaplains, Almoners, and Canons, who read a Chapter every Day out of the *Alcoran* in the Mosques, and have Prebends for so doing. The *Hatib* of the Mosque, is what we call the Parson of the Parish; and the *Sheics* are the Preachers who take their Text out of the *Alcoran*.

They have several Orders of Monks too, particularly *Dervishes* or *Dervishes*, who lead a very austere Life, and profess extream Poverty; though allowed to marry. The *Dervishes* are also called *Mevelavises*, from their Chief or Founder, one *Mevelava*. Their chief Monastery is that near *Coigni* in *Natolia*; where their General makes his Residence; and where the Assemblies of the Order are held: The other Houses being all dependent of this; by a Privilege granted to this Monastery under *Ottoman I.*

The *Dervishes* affect a World of Modesty, Patience, Humility, and Charity. They always go bare-legged, and open-breasted, and frequently burn themselves with hot Iron, to inure themselves to Patience. They always fast on *Wednesdays*, eating nothing on those Days till after Sun-set. *Tuesdays* and *Fridays* they hold Meetings, at which the Superior of the House presides. One of them plays all the while on a Flute, and the rest dance, turning their Bodies round with the greatest Swiftneſs imaginable. Long Custom to this Exercise from their Youth, has brought them to such a Pass, that it does not maze, or discompose them at all. This Practice they observe with great Strictness, in Memory of *Mevelava* their Patriarch's turning miraculously round, for the Space of four Days, without any Food or Refreshment; his Companion *Hamsa* playing all the while on the Flute: After which he fell into an Extasy, and therein received wonderful Revelations for the Establishment of his Order. They believe the Flute an Instrument consecrated by *Jacob*, and the Shepherds of the Old Testament; by Reason they sang the Praises of God thereon. They profess Poverty, Chastity, and Obedience; and really observe them while they remain *Dervishes*; but if they chuse to go out and marry, they are always allowed.

The Generality of *Dervishes* are rank Charletans; some apply themselves to Legerdemain, Postures, &c. to amuse the People; others give into Sorcery and Magick: But all of them, contrary to *Mahomet's* Precept, are said to drink Wine, Brandy, and other fuddling Liquors, to give them the Degree of Gaiety their Order requires.

Besides their great Saint *Marvelava*, there are some particular Saints honoured in some particular Monasteries; as *Kederle*, greatly revered in the Monasteries of *Egypt*, and held by some to be St. *George*, and by others, with more Probability, the Prophet *Elias*.

The *Dervishes* are great Travellers; and under Pretence of preaching and propagating their Faith, are continually passing from one Place to another; on which Account, they have been frequently used as Spies.

There are also *Dervishes* in *Persia*, called in that Country *Abdal*, q. d. Servants of God. They lead a very penurious, austere Life, and preach the *Alcoran* in the Streets, Coffee-Houses, and where they can meet with Auditors. The Persian *Dervishes* relate little but Fables to the People, and are in the last Contempt among Men of Wit and Letters.

There are other Religious called *Cadrites*, whose Founder was *Abdul Cadri*, a great Philosopher and Lawyer; whence they have their Name *Cadrites*.

They live in common, and in a Kind of Monastery; which however they are allowed to quit, if they request it, and to marry; on Condition of their wearing black Buttons on their Garments, to distinguish them from the rest of the People.

In their Monasteries, each *Friday* they pass the greatest Part of the Night in running round, holding each other's Hand, and crying incessantly *Hbai*, Living, one of the Names of God; one of their Number plays all the Time on a Flute, to animate them in this extravagant Dance.

The Temples which the *Mahometans* set apart for the Exercise of their Religion, are called *Mosques* (from the Turkish *Mesged* or *Meschit*, which properly signifies a Temple built of Wood, such as the *Turks* first used.)

There are royal Mosques founded by the Emperor, as the *Solimania* and *Uclidea*, at *Constantinople*; and private Mosques founded by *Muphties*, *Vizirs*, *Bashaws*, &c.

Mosques are built like large Halls, with Isles, Galleries, and Domes, and are adorned on the Inside with Compartiments, and Pieces of Arabesque Work. On one Side is always found a Pool with several Cocks; and on the Top is placed a Crescent.

The *Turks* have converted most of the Christian Churches into Mosques, as the celebrated Temple of *St. Sophia*, at *Constantinople*, &c.

The *Mahometans* distinguish themselves by the Title of *Mussulmen*, which in the Turkish Language signifies true Believers, or Orthodox.

The Appellation was first given to the *Saracens*, as is observed by *Leunclavius*. There are two Kinds of *Mussulmen*, very averse to each other, and whom we have already mentioned, viz. the *Sennonites* and the *Shiites*. The *Sennonites* follow the Interpretations of the *Alcoran* given by *Omer*. The *Shiites* are the Followers of *Ali*. The Subjects of the King of *Persia* are *Shiites*, and those of the Grand Signior *Sennonites*.

Some Authors will have it that the Word *Mussulman* signifies *saved*, that is, *predestinated*; and that the *Mahometans* give themselves the Appellation, as believing they are all predestinated to Salvation. *Martinius* is more particular to the Origin of the Name, which he derives from the *Arabick* *مخلص*, *Musalam*, *saved*, snatched out of Danger: The *Mahometans*, he observes, establishing their Religion by Fire and Sword, massacred all those who would not embrace it, and granted Life to all that did, calling them *Mussulmen*, q. d. *erepti e periculo*, whence the Word in Course of Time, became the distinguishing Title of all those of that Sect, who have affixed to it the Signification of *true Believer*.

Notwithstanding this barbarous Zeal for propagating their Religion, the *Mahometans* are most commonly very charitable, particularly those who are right *Mussulmen*, or religious Observers of the *Alcoran*. A Mark of their extensive Charity and Hospitality, is their building *Caravansera's*, which are large publick Buildings, or Inns destined to receive and lodge Travellers.

Of these *Caravansera's*, or, as *Chardin* calls them, *Caravanسرائ*, there are a great Number throughout the East, erected out of the Charity and Magnificence of Princes, &c. of the several Countries.

Those of *Schiras* and *Casbia* in *Persia*, are said to have cost 60,000 Crowns each. They are open to People of all Religions and Countries, without any Questions asked, or any Money requir'd.

The *Caravanسرائ*, are usually huge square Buildings, with a spacious Court in the Middle thereof. They are encompassed with Galleries and Arches, under which runs a Kind of Banquette, or Elevation some Feet high, where Travellers rest themselves, and make their Lodgings as well as they can; their Baggage and the Beasts that carry them, being fasten'd at the Foot of the Banquette. Over the Gate there are frequently a Sort of little Chambers; which the *Caravanسرائ* lets out at a very dear Rate, to such as have a Mind to be to themselves.

Though the *Caravansera's* serve in lieu of Inns, yet there is this essential Difference between them and our Inns, that the Traveller finds nothing at all in the *Caravansera*, neither for himself nor his Cattle; but must carry all his Provisions and Necessaries with him. They are chiefly built in dry, barren, desert Places; and are generally furnished with Water from a great Distance, and at a vast Expence; there being no *Caravansera* without its Well of Water. There are several of them in Cities, where they serve not only as Inns, but as Shops, Warehouses, and even Exchanges.

There are few Cities in the East without their *Caravansera's*

o'Clock in the Morning they do not esteem necessary; but those at Noon and in the Afternoon are held to be *Jure Divino*. They are obliged to observe an Infinity of Things in order to be heard. If they speak or smile in praying, their Prayers are vain: And it is the same Thing if they weep, unless it be with the Thought of Paradise or Hell: In many Prayers they use Beads.

The *Mahometans* believe with the Christians and *Jews*, the Resurrection of the Dead. They hold that ere that Time an *Anti-Mahomet* will come; and that *Jesus Christ* will descend from Heaven to kill him, and establish *Mahometanism*: To which they add a great many more Chimeras relating to *Gog* and *Magog*, and the Beast that is to come out of *Mecca*. The Mountains are to fly in the Air like Birds, and at last the Heavens will melt and drop down upon the Earth. They add however, that some Time after God will renew and re-establish the Earth, that then the Dead will be raised.

As to their *Fasting*, they are so scrupulous on that Point, that they will not so much as take the Smell of any Perfume by the Nose: They hold, that Odors themselves break *Fast*; if they bathe it is forbid to put the Head under Water for Fear of swallowing any of it; and as for Women they are forbid to bathe at all on Fast-Days, for a Reason peculiar to the Sex. Their great Fast or Lent is called *Ramazan* or *Ramadan*, during which they fast all Day and feast all Night.

The *Turks* are commonly very charitable, from the Prince to the meanest of the Subjects. The Grand Signior seldom undertakes any Project of Consequence, before he has made his *Corban*, which is a Slaughter of a great Number of Sheep, which is afterwards distributed to the Poor, hoping by those Alms to render Heaven propitious to his Enterprize. The Grand Vizier, and all the other Officers of the Empire, most commonly follow on such Occasions, in Proportion to their Abilities the Sultan's Example.

All the Revelations, Doctrine, and Prophecies of the pretended *Mahomet*, are contained in the Book called *Alcoran*, in a very confuse and undigested Manner.

The Word *Alcoran* is Arabick, and literally denotes either Reading or Collection; but it is in the first of these Senses that the *Alcoran* of *Mahomet* seems best understood: *Mahomet* purposing to have his Book called *Reading*, by way of Eminence, in Imitation of the *Jews* and Christians, who call the New and Old Testament *Writing*, *Scripture*, on the same Account.

The *Turks* also call it *Alforkan*, from the Verb פָּרַק *Pharaka*, to divide or distinguish; either by reason it makes the Distinction between what is true and false, or between what is lawful to do and what not; or else on Account of its containing the Division or Heads of the Law; in which again they imitate the *Hebrews*, who give divers Books the like Name פְּרָקִים *Perakim*, q. d. *Capita*, *Capitula*, Chapters, Heads.—Lastly, the *Alcoran*, is also denominated *Aldbicbr*, Advertisement or Remembrance, as serving to retain or retrieve the Knowledge of the Law.

I have already observed, that it is the common Opinion among the Christians, that the abominable Monk *Sergius* composed this infamous Book for *Mahomet*, but the *Mahometans* believe it as an Article of their Faith, that the Prophet, who, they say, was an illiterate Man, had no Hand in it, but that it was given him by God, who to that End made use of the Ministry of the Angel *Gabriel*; that however it was communicated to him by little and little, a Verse at a Time, and in different Places, during the Course of 23 Years. And hence, say they, proceeds that Disorder and Confusion visible in the Work. Which in Truth is so great, that all their Doctors (if illiterate Fellows can be called by that Name) have never been able to adjust it. For *Mahomet*, or rather his Copist, having put all these loose Verses promiscuously in a Book together, it was impossible ever to retrieve the Order wherein they were delivered.

Those 23 Years which the Angel employed in conveying the *Alcoran* to *Mahomet*, are of wonderful Service to his Followers, inasmuch as they furnish them with an Answer to such as tax them with those glaring Contradictions wherewith the Book is full: Those Contradictions they piously father upon God himself, al-

ledging, that in the Course of so long Time, he repealed and altered several Doctrines and Precepts, which the Prophet had before received of him.

M. *d'Herbelot* thinks it probable, that when the Heresies of the *Nestorians*, *Eutychians*, &c. had been condemned by Œcumenical Councils, many Bishops, Priests, Monks, &c. being driven into the Deserts of *Arabia* and *Egypt*, furnished the Impostor with Passages, and crude ill-conceived Doctrines of the Scriptures: And it was hence that the *Alcoran* became so full of the wild and erroneous Opinions of those Hereticks.

The *Jews* also, who were very numerous in *Arabia*, contributed their Quota to the *Alcoran*; nor is it without some Reason that they boast, twelve of their chief Doctors, to have been the Authors of this detestable Work.

The *Alcoran*, it is to be observed, while *Mahomet* lived, was kept in loose Sheets: His Successor *Abubeker*, first collected them into a Volume, and committed the Keeping thereof to *Haphsa*, the Widow of *Mahomet*, in order to be consulted as an Original. And there being a good deal of Diversity between the several Copies already dispersed throughout the Provinces: *Ottoman*, Successor of *Abubeker*, procured a great Number of Copies to be taken from that of *Haphsa*; at the same Time suppressing all the others not conformable thereto.

The chief Differences then, in the Copies of this Book, consist in the Points; which were not in Use in the Time of *Mahomet* and his immediate Successors, but were added since, to ascertain the Reading; after the Example of the *Massorettes*, who put the like Points to the *Hebrew* Text of the Scripture.

The Work is divided into *Suras* or Chapters, and the *Suras* sub-divided into little Verses, which are all composed in a broken interrupted Style, resembling Prose rather than Verse. The Division into *Suras* is but of late standing: The usual Number of them is sixty.

There are seven principal Editions of the *Alcoran*, two at *Medina*, one at *Mecca*, one at *Cousa*, one at *Bassora*, one in *Syria*, and the common Edition. The first contains 6000 Verses, the others surpassing this Number by 200, or 236 Verses; but the Number of Words and Letters is the same in all, viz. 77,639 Words, and 323,015 Letters.

The Number of Commentaries on the *Alcoran* is so large, that only the bare Titles would make a large Volume.—*Ben Oschair* has wrote the History thereof, intitled, *Tarikh Ben Oschair*: The principal among them are *Reidhaori*, *Tbaalebi*, *Zamalchshari*, and *Bacai*.

Besides the *Alcoran*, which is the Basis of the *Mahometan* Faith, they have also a Book containing their Traditions, which they call *Sonna*; which Word signifies, in *Arabick*, the same with *Mishna* in the *Hebrew*; that is second Law, or as the *Jews* call it *Oral Law*.

The Adherents to the *Sonna* are called *Sonnites*; and as among the *Jews* there is a Sect of *Caraites*, who reject the Traditions as Fables invented by the *Rabbim*; there are also Sectaries among the *Mahometans*, called *Shiites*, who reject the Traditions of the *Sonnites*; as being only founded on the Authority of an Apocryphal Book, and not derived to them from their Legislator.

There is the same Enmity between the *Sonnites* and *Shiites*, as between the *Rabbinists*, *Jews*, and the *Caraites*. The *Shiites* reproach the *Sonnites*, with obtruding the Dreams of their Doctors for the Word of God; and the *Sonnites* in their Turn treat the *Shiites* as Hereticks, who refuse to admit the divine Precepts, have corrupted the *Alcoran*, &c.

The *Mahometans* have a positive Theology, built on the *Alcoran* and Tradition, as well as a scholastical one built on Reason. They have likewise their Casuists, and a Kind of Canon Law, wherein they distinguish between what is of divine, and what is of positive Right.

The sovereign Interpreter of the *Alcoran*, and Chief or Patriarch of the *Mahometan* Religion, is called *Muphti*, or *Mufti*; he decides all Questions of the Law, takes Place of the Bashaws, and his Authority is often terrible to the Grand Signior himself; whom he can call to an Account by his Persa's or Bulls, and even depose of his own Authority. For as the *Turks*, as well as some other Nations, want sometimes to cover their Rebellion with the

the Cloak of Religion, they have Recourse to the *Muphti's* holy Craft to give a Sanction to it; who, according to the Levitical Genius, seldom refuses to have a Hand in so good a Cause. The unhappy *Ibrahim*, was deposed and murder'd, by the Authority of the *Muphti*, and by a Principle of Religion, much about the Time, that excellent Prince, the unhappy *Charles I.* was murder'd in *England*, by the same Principle of Religion. From these Sorts of Religions, *Good Lord deliver us.*

It is the *Muphti* that girds on the Sword to the Grand Signior's Side, which Ceremony answers to the Coronation of our Kings.

The *Mahometans* have also their Beneficiaries, Chaplains, Almoners, and Canons, who read a Chapter every Day out of the *Alcoran* in the Mosques, and have Prebends for so doing. The *Hatib* of the Mosque, is what we call the Parson of the Parish; and the *Sheics* are the Preachers who take their Text out of the *Alcoran*.

They have several Orders of Monks too, particularly *Dervishes* or *Dervishes*, who lead a very austere Life, and profess extream Poverty; though allowed to marry. The *Dervishes* are also called *Mevelavises*, from their Chief or Founder, one *Mevelava*. Their chief Monastery is that near *Coigni* in *Natolia*; where their General makes his Residence; and where the Assemblies of the Order are held: The other Houses being all dependent of this; by a Privilege granted to this Monastery under *Ottoman I.*

The *Dervishes* affect a World of Modesty, Patience, Humility, and Charity. They always go bare-legged, and open-breasted, and frequently burn themselves with hot Iron, to inure themselves to Patience. They always fast on *Wednesdays*, eating nothing on those Days till after Sun-set. *Tuesdays* and *Fridays* they hold Meetings, at which the Superior of the House presides. One of them plays all the while on a Flute, and the rest dance, turning their Bodies round with the greatest Swiftneſs imaginable. Long Custom to this Exercise from their Youth, has brought them to such a Pass, that it does not maze, or discompose them at all. This Practice they observe with great Strictness, in Memory of *Mevelava* their Patriarch's turning miraculously round, for the Space of four Days, without any Food or Refreshment; his Companion *Hamsa* playing all the while on the Flute: After which he fell into an Extasy, and therein received wonderful Revelations for the Establishment of his Order. They believe the Flute an Instrument consecrated by *Jacob*, and the Shepherds of the Old Testament; by Reason they sang the Praises of God thereon. They profess Poverty, Chastity, and Obedience; and really observe them while they remain *Dervishes*; but if they chuse to go out and marry, they are always allowed.

The Generality of *Dervishes* are rank Charletans; some apply themselves to Legerdemain, Postures, &c. to amuse the People; others give into Sorcery and Magick: But all of them, contrary to *Mahomet's* Precept, are said to drink Wine, Brandy, and other fuddling Liquors, to give them the Degree of Gaiety their Order requires.

Besides their great Saint *Marvelava*, there are some particular Saints honoured in some particular Monasteries; as *Kederle*, greatly revered in the Monasteries of *Egypt*, and held by some to be St. *George*, and by others, with more Probability, the Prophet *Elias*.

The *Dervishes* are great Travellers; and under Pretence of preaching and propagating their Faith, are continually passing from one Place to another; on which Account, they have been frequently used as Spies.

There are also *Dervishes* in *Perſia*, called in that Country *Abdal*, q. d. Servants of God. They lead a very penurious, austere Life, and preach the *Alcoran* in the Streets, Coffee-Houses, and where they can meet with Auditors. The *Perſian Dervishes* relate little but Fables to the People, and are in the last Contempt among Men of Wit and Letters.

There are other Religious called *Cadrites*, whose Founder was *Abdul Cadri*, a great Philosopher and Lawyer; whence they have their Name *Cadrites*.

They live in common, and in a Kind of Monastery; which however they are allowed to quit, if they request it, and to marry; on Condition of their wearing black Buttons on their Garments, to distinguish them from the rest of the People.

In their Monasteries, each *Friday* they pass the greatest Part of the Night in running round, holding each other's Hand, and crying incessantly *Hbai*, Living, one of the Names of God; one of their Number plays all the Time on a Flute, to animate them in this extravagant Dance.

The Temples which the *Mahometans* set apart for the Exercise of their Religion, are called *Mosques* (from the Turkish *Mesged* or *Meschit*, which properly signifies a Temple built of Wood, such as the *Turks* first used.)

There are royal Mosques founded by the Emperor, as the *Solimania* and *Uclidea*, at *Constantinople*; and private Mosques founded by *Muphties*, *Vizirs*, *Bashaws*, &c.

Mosques are built like large Halls, with Isles, Galleries, and Domes, and are adorned on the Inside with Compartiments, and Pieces of Arabesque Work. On one Side is always found a Pool with several Cocks; and on the Top is placed a Crescent.

The *Turks* have converted most of the Christian Churches into Mosques, as the celebrated Temple of St. *Sophia*, at *Constantinople*, &c.

The *Mahometans* distinguish themselves by the Title of *Mussulmen*, which in the Turkish Language signifies true Believers, or Orthodox.

The Appellation was first given to the *Saracens*, as is observed by *Leunclavius*. There are two Kinds of *Mussulmen*, very averse to each other, and whom we have already mentioned, viz. the *Sennonites* and the *Shiites*. The *Sennonites* follow the Interpretations of the *Alcoran* given by *Omer*. The *Shiites* are the Followers of *Ali*. The Subjects of the King of *Perſia* are *Shiites*, and those of the Grand Signior *Sonnites*.

Some Authors will have it that the Word *Mussulman* signifies *saved*, that is, *predestinated*; and that the *Mahometans* give themselves the Appellation, as believing they are all predestinated to Salvation. *Martinus* is more particular to the Origin of the Name, which he derives from the Arabick *مسلم*, *Musalam*, saved, snatched out of Danger: The *Mahometans*, he observes, establishing their Religion by Fire and Sword, massacred all those who would not embrace it, and granted Life to all that did, calling them *Mussulmen*, q. d. *erepti e periculo*, whence the Word in Course of Time, became the distinguishing Title of all those of that Sect, who have affixed to it the Signification of true Believer.

Notwithstanding this barbarous Zeal for propagating their Religion, the *Mahometans* are most commonly very charitable, particularly those who are right *Mussulmen*, or religious Observers of the *Alcoran*. A Mark of their extensive Charity and Hospitality, is their building *Caravanſera's*, which are large publick Buildings, or Inns destined to receive and lodge Travellers.

Of these *Caravanſera's*, or, as *Chardin* calls them, *Caravanſarai*, there are a great Number throughout the East, erected out of the Charity and Magnificence of Princes, &c. of the several Countries.

Those of *Schiras* and *Casbia* in *Perſia*, are said to have cost 60,000 Crowns each. They are open to People of all Religions and Countries, without any Questions asked, or any Money requir'd.

The *Caravanſerai*, are usually huge square Buildings, with a spacious Court in the Middle thereof. They are encompassed with Galleries and Arches, under which runs a Kind of Banquette, or Elevation some Feet high, where Travellers rest themselves, and make their Lodgings as well as they can; their Baggage and the Beasts that carry them, being fasten'd at the Foot of the Banquette. Over the Gate there are frequently a Sort of little Chambers; which the *Caravanſeraſkier* lets out at a very dear Rate, to such as have a Mind to be to themselves.

Though the *Caravanſera's* serve in lieu of Inns, yet there is this essential Difference between them and our Inns, that the Traveller finds nothing at all in the *Caravanſera*, neither for himself nor his Cattle; but must carry all his Provisions and Necessaries with him. They are chiefly built in dry, barren, desert Places; and are generally furnished with Water from a great Distance, and at a vast Expence; there being no *Caravanſera* without its Well of Water. There are several of them in Cities, where they serve not only as Inns, but as Shops, Warehouses, and even Exchanges.

There are few Cities in the East without their *Caravanſera's*

sera's, especially within the Dominions of *Turky*, *Persia*, and the *Great Mogul*. Those of *Constantinople*, *Ispahan*, and *Agra*, the Capitals of the three Empires, are distinguished for their Magnificence and Commodiousness.

In *Turky*, none but the Grand Signior's Mother and Sister, with the Viziers and Bashaws, who have been in

three Battles against *Christians*, are allowed to build a *Caravansera*.

Besides *Caravansera's*, the *Turks* have also Hospitals, for the Poor and Sick; and even for Beasts of all Kinds, which are render'd incapable to provide for themselves, either through Age, Illness, or any other Accidents.

MATHEMATICKS.

MATHEMATICKS (from *μαθηματις*, which signifies *Discipline* or *Science*) is the Science of Quantity, or a Science that considers Magnitudes, either as computable or measurable.

Mathematicks are divided with Regard to their End, into *speculative* and *practical*.

Speculative Mathematicks, are those which rest in the bare Contemplation of the Properties of Things.

Practical Mathematicks are those which apply the Knowledge of those Properties to some Uses in Life.

With Regard to their Object, *Mathematicks* are divided into *pure* or *abstract*, and *mix'd*.

Pure Mathematicks, consider Quantities abstractedly; without any Relation to Matter or Bodies.

Mix'd Mathematicks, consider Quantity as subsisting in material Beings, *e. gr.* Length in a Road, Breadth in a River, Height in a Star, &c.

Pure Mathematicks, again, either consider Quantity as discrete, and so computable, as *Arithmetick*; or as concrete, or continued, and so measurable, as *Geometry*, and *Trigonometry*.

Mix'd Mathematicks are very extensive, and are distinguished by various Names, as the Subjects they consider, and the Views wherein they take them vary; it being sufficient to determine an Art to be a Branch of *mix'd Mathematicks*, that *pure Mathematicks* are applicable thereto, *i. e.* that it may be explained and demonstrated from the Principles of *Arithmetick* and *Geometry*. Such are,

Mechanicks, which consider Motion, or the Law of moving Bodies. — *Hydrostaticks*, which consider the Laws of Fluids, or of Bodies gravitating in Fluids. — *Pneumaticks*, the Air, with Regard to the Laws of Mensuration thereof. — *Hydraulicks*, the Motion of Fluids. — *Opticks*, direct Light or Vision. — *Catoptricks*, reflected Vision. — *Dioptricks*, refracted Vision. — *Perspective*, the Images of Objects, in order to delineate or represent them. — *Astronomy*, the Universe and the Phænomena of the Heavens. — *Geography*, the Earth, both as in itself, and in its Affections. — *Hydrography*, the Sea, principally as navigable. — *Chronology*, Time, with Regard to the measuring and distinguishing thereof. — *Gnomonicks* or *Dialling*, Shadows, in order for determining the Hour of the Day. — *Pyrotechny*, artificial Fires, with Regard both to Diversion, and to the Uses of War. — *Military Architecture*, the Strength of Places, with Regard to their Defence against an Enemy. — *Civil Architecture* (now become a Branch of *Mathematicks*) Buildings. — *Musick*, Sounds, and their Effects on the Ear.

Note, That as I have already treated several of these Branches of *Mathematicks*, each under its proper Head; and design to do the same of all the others, to avoid Confusion, ease the Memory of the Reader, and procure him a greater Facility to learn each Branch, &c. I'll content myself to speak in this Place of the Origin of *Mathematicks*, and of the Progress thereof.

For the Origin of the *Mathematicks*, *Josephus* dates it before the Flood, and makes the Sons of *Seth*, Observers of the Course and Order of the heavenly Bodies: He adds, that to perpetuate their Discoveries, and secure them from the Injuries either of a Deluge, or a Conflagration, they had them engraven on two Pillars, the one of Stone, the other of Brick; the former of which, he says, was standing in *Syria* in his Days.

The first who cultivated *Mathematicks* after the Flood, were the *Assyrians* and *Chaldeans*; from whom the same *Josephus* adds, they were carried by *Abraham* to the

Egyptians; who proved such notable Proficients, that *Aristotle* makes no Scruple to fix the first Rise of *Mathematicks* among them. From *Egypt*, 584 Years before Christ, they passed into *Greece* through the Hands of *Thales*, who having learnt *Geometry* of the *Egyptian* Priests, taught it in his own Country. After *Thales* comes *Pythagoras*, who among other mathematical Arts, paid a peculiar Regard to *Arithmetick*, fetching the greatest Part of his Philosophy from Numbers: He was the first, as *Laertius* tells us, who abstracted *Geometry* from Matter, and to him we owe the Doctrine of incommensurable Magnitude, and the five regular Bodies, besides the first Principles of *Musick* and *Astronomy*. *Pythagoras* was succeeded by *Anaxagoras*, *Ænopydes*, *Briso*, *Antipho*, and *Hippocrates* of *Scio*; who all applied themselves particularly to the Quadrature of the Circle, the Duplication of the Cube, &c. but the last with most Success: This last is also mention'd by *Proclus*, as the first who compiled Elements of *Mathematicks*.

Democritus excelled in *Mathematicks* as well as *Physicks*, though none of his Works in either Kind are extant; the Destruction of which some Authors lay at *Aristotle's* Door. The next in order is *Plato*, who not only improved *Geometry*, but introduced it into *Physicks*, and so laid the Foundation of a solid Philosophy. Out of his School proceeded a Crowd of *Mathematicians*; *Proclus* mentions thirteen of Note; among whom was *Leodamus*, who improved the Analysis first invented by *Plato*; *Theætetus*, who wrote Elements; and *Archytas*, who has the Credit of being the first who applied *Mathematicks* to use in Life. These were succeeded by *Neocles* and *Theon*, the last of whom contributed to the Elements. *Eudoxus* excelled in *Arithmetick* and *Geometry*, and was the first Founder of a System of *Astronomy*. *Menechmus* invented the conick Sections; and *Theudrus* and *Hermitomus* improved the Elements.

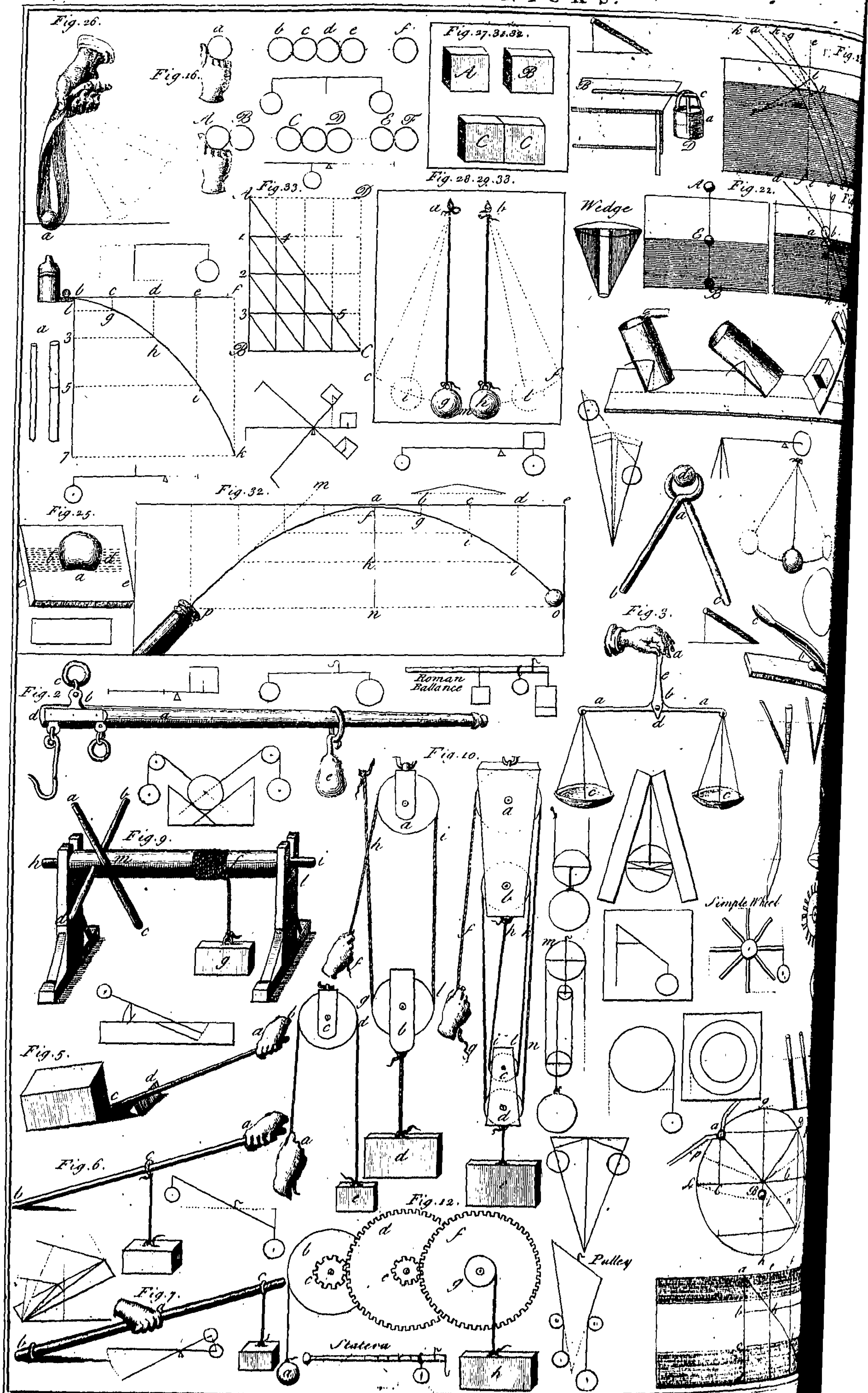
As for *Aristotle*, his Works are so stored with *Mathematicks*, that *Blancanus* compiled a whole Book of them: Out of his School came *Eudemus* and *Theophrastus*; the first of whom wrote of Numbers, *Geometry*, and invisible Lines; the latter a mathematical History. To *Aristeus*, *Isidorus*, and *Hypsicles*, we owe the Books of Solids, which, with the other Books of Elements, were improved, collected, and methodized by *Euclid*, who died 284 Years before Christ.

An hundred Years after *Euclid*, came *Eratoſthenes* and *Archimedes*. Contemporary with the latter was *Conon*, a Geometrician and Astronomer. Soon after came *Apollonius Pergæus*; whose Conicks are still extant. To him are likewise ascribed the fourteenth and fifteenth Books of *Euclid*, which are said to have been contracted by *Hypsicles*. *Hipparchus* and *Menelaus*, wrote on the Subtenses in a Circle; the latter also on spherical Triangles: *Theodosius's* three Books of Sphericks are still extant; and all these, *Menelaus* excepted, lived before Christ.

In the Year 70, of Christ, *Ptolemy* of *Alexandria* was born, the Prince of Astronomers, and no mean Geometrician: He was succeeded by the Philosopher *Plutarch*, of whom we have still extant some mathematical Problems. After him came *Eutocius*, who commented on *Archimedes*; and occasionally mentions the Inventions of *Philo*, *Diocles*, *Nicomedes*, *Sporus*, and *Heron*, on the Duplication of the Cube. To *Ctesibes* of *Alexandria* we owe our Pumps; and *Geminus*, who came soon after, is preferred by *Proclus* to *Euclid* himself.

Diophantus of *Alexandria* was a great Master of Numbers, and the first Inventor of Algebra; among others of the Antients, *Nicomachus* is celebrated for his arithmetical,

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metical, geometrical, and musical Works; *Serenus* for his Book on the Section of the Cylinder; *Proclus* for his Comments on *Euclid*; and *Theon* has the Credit among some of being Author of the Books of Elements ascribed to *Euclid*. The last to be named among the Antients, is *Pappus* of *Alexandria*, who flourished in the Year of Christ 400, and is celebrated for his Books of mathematical Collections still extant.

MECHANICKS.

MECHANICKS, are a mixed mathematical Science, which considers Motion or moving Powers, their Nature and Laws, with the Effects thereof, in Machines, &c.

That Part of *Mechanicks*, which considers the Motion of Bodies arising from Gravity, is by some called *Statics*; in Distinction from that Part which considers the mechanical Powers, and the Application properly called *Mechanicks*. So that on this Footing *Statics* should be the Doctrine or Theory of Motion; and *Mechanicks* the Application thereof.

Note, That the whole Doctrine of *Mechanisms* depends entirely on a sole Point, which is to find the Center of Gravity of Bodies; therefore I'll begin this Treatise by examining what is Gravity, with Respect to *Mechanicks*; how Gravity is divided; the Center of Gravity, &c.

DEFINITIONS.

Gravity, in *Mechanicks*, denotes the Conatus or Tendency of Bodies towards the Center of the Earth.

Gravity, in this View, is distinguished into *absolute* and *relative*.

Absolute Gravity is that whereby a Body descends freely through an unresisting Medium. Thus the *absolute Gravity* of a Stone in the Air, is its Faculty of descending, when it only touches the æthereal Particles.

Relative Gravity is that wherewith a Body descends, after it has spent Part of its Weight in overcoming some Resistance. Such is that wherewith a Body descends along an inclined Plane, where some Part is employ'd in overcoming the Resistance or Friction of the Plane.

The *Center of Magnitude* of a Body, is a Point as equally distant as possible from the two Extrems.

The *Center of Motion* of a Body, is the fix'd Point round which one or more heavy Bodies, that have one common Center of Gravity, revolve.

The *Center of Gravity*, is a Point within a Body, through which if a Plane pass, the Segments on each Side will be equal and equiponderate, *i. e.* neither of them can move the other.

Whatever moves or suspends a Body, is called a *moving Power* or *Faculty*.

The Quantity of Power is determined from the Quantity of Gravity of the Power suspended or moved, *v. g.* if the Body A be carried downward, according to the Line B C, fig. 1. by a Power of 10 Pounds Weight, the Power which stops its Descent, whether it only suspends it, or forces or draws it from C towards B, will be called a Power of 10 Pounds.

Whatever can accelerate, or stop the Motion of a Body, is called *Machine*.

There are two Sorts of *Machines*, some *simple* and others *compound*.

Simple Machines are those otherwise called *mechanical Powers*.

There are six *simple Machines*, to which all others may be reduced, *viz.* the *Ballance*, *Lever*, *Wheel*, *Pully*, *Wedge*, and *Screw*; to which may be added the *inclin'd Plane*, since it is certain that the most heavy Bodies are lifted up by its Means, which otherwise could not be moved.

Compound Machine is that which is composed of several simple ones combined together.

The Number of *compound Machines* is now almost infinite; and yet the Antients seem to have out-done the Moderns in this Respect. Their Machines of War, Architecture, &c. being described as vastly superior to ours.

The *Application of the Weight* or *Power* to the Lever,

is the Angle of the Line of Direction of that Power or Weight, with the Lever.

The *Distance of Power* or *Weight*, is the Space from the Point of the Machine, to which the Power or Weight is applied, to the Center of the Motion.

Note, That to observe the same Order in this Treatise, I have observed in all my other Treatises of Mathematics, I'll explain every one of the simple Machines or mechanical Powers, and join to that each Explication, the Doctrine thereof: Therefore,

The *Ballance* or *Balance*, is used principally for determining the Quality or Difference of Weights in heavy Bodies, and consequently their Masses or Quantities of Matter.

The *Ballance* is of two Kinds, *viz.* the *antient* and *modern*.

The *antient* or *Roman*, called also *Statera Romana*, consists of a Lever, *a*, fig. 2. or a Beam, moveable on a Center *b*, and suspended near one of its Extrems *c*; on one Side the Center *d*, are applied the Bodies to be weighed, and their Weight is measured by the Division marked on the Beam; on the other Side is the Place where a Weight moveable *e*, along it keeps the *Ballance* in Equilibrium.

The *modern Ballance*, fig. 3. now ordinarily in Use, consists of a Lever or Beam *a*, suspended exactly by the Middle *b*, to the Extrems whereof are hung Scales or *Basons*, *c. c.*

In each Case the Beam is called the *Jugum*, and the two Moieties thereof on each Side the *Axis*, the *Brachia*, or *Arms*: And the Handle whereby it is held, *Trutina*. The Line on which the Beam turns, or which divides its *Brachia*, is called the *Axis d*, and when considered to the Length of the *Brachia*, is esteemed but a Point, and called the *Center of the Ballance*; and the Places where the Weights are applied, the *Points of Suspension* or *Application*. That slender Part perpendicular to the *Jugum*, whereby either the Equilibrium, or Preponderancy of Bodies is indicated, is called the *Tongue of the Ballance*, *e*.

In the *Roman Ballance*, therefore, the Weight used for a Counter-balance is the same, but the Points of Application various. In the common *Ballance*, the Counterpoise is various, and the Point of Application the same.

The Principle on which each is founded is the same, and may be conceived from what follows.

The Beam *a a*, fig. 3. which is the principal Part of the *Ballance*, is a Lever of the first Kind, which (instead of resting on a *Fulcrum* at *d*, its Center of Motion) is suspended by somewhat fasten'd to *d*, its Center of Motion.

Hence as the known Weight is to the unknown, so is the Distance of the unknown Weight from the Center of Motion, to the Distance of the known Weight, where the two Weights will counter-poise to each other; consequently the known Weight shews the Quality of the unknown.

Or thus; the Action of a Weight to move a *Ballance*, is by so much greater, as the Point pressed by the Weight is more distant from the Center of the *Ballance*; and that Action follows the Proportion of the Distance of the said Point from the Center.

As to the *Varieties in the Application of the Ballance*. If the *Brachia* of a *Ballance* be divided into equal Parts, one Ounce applied to the ninth Division from the Center, will equiponderate with three Ounces at the third, and two Ounces at the sixth Division act as strongly as three at the fourth, &c.

Hence

Hence it follows, that the Action of a Power to move a *Ballance*, is in a Ratio compounded of the Power itself, and its Distance from the Center; for that Distance is as the Space gone through in the Motion of the *Ballance*.

It may be here observed, that the Weight equally presses the Point of Suspension at whatever Height it hangs from it, and in the same Manner as if it was fixt at that very Point; for the Weight at all Heights equally stretches the Cord by which it hangs.

A *Ballance* is said to be in *Æquilibrium*, when the Actions of the Weights upon the Brachia to move the *Ballance* are equal, so as mutually to destroy each other. When a *Ballance* is in *Æquilibrium*, the Weights on each Side are said to *equiponderate*; but then the Distances from the Center must be reciprocally as the Weights; in which Case, if each Weight be multiplied by its Distance, the Products will be equal; which is the Foundation of the Steel-Yard.

Thus in a *Ballance*, whose Brachia is very unequal, a Scale hanging at the shortest, and the longest divided into equal Parts; if such a Weight being applied to it as at the first Division, shall equiponderate with one Ounce in the Scale, and the above-mentioned Weight be moved along the longest Brachium, till the *Æquilibrium* be found: The Number of Divisions between the Body and the Center, shews the Number of Ounces that the Body weighs, and the Subdivisions the Parts of an Ounce.

On the same Principle also is founded the *deceitful Ballance*, which cheats by the Inequality of the Brachia: For Instance; take two Scales of unequal Weights, in the Proportion of 9 to 10, and hang one of them at the tenth Division of the *Ballance* above-described, and the other at the ninth Division, so that there may be an *Æquilibrium*; if then you take any Weights, which are to one another as 9 to 10, and put the first in the first Scale, and the second in the other Scale, they will equiponderate.

It may happen, contrary to the Intention of the Scale-Maker, that a *Ballance* is deceitful; which to discover, the Weights must be changed Scales; for then they will not be in an *Æquilibrium*, though they were at first.

We know, by Experience, that as a Merchant who makes Use of such a *Balance* gets, and the Buyer loses, if the Merchandize be put into the Scale of the longer Arm, Means have been devised whereby the Damages of both are compensated: Which those thought to have found, who weighed several Times the Things which could have been weighed once, so as to put the Weight alternately in the two Scales of the *Balance*, v. gr. if sixty Pounds Weight of Merchandizes were to be weighed in such a *Balance*, they were divided into six equal Parts, the First, Third, and Fifth whereof were weighed in the Scale of the shorter Arm, and the Second, Fourth and Sixth in that of the longer Arm.

But it is impossible to find an accurate Weight by that Means, as is plainly seen by the Calculation, v. gr. let sixty Pounds Weight of Merchandize be weighed in a *Balance*, the Arms whereof are to one another as 15 to 16: Let the Weight of 10 Pounds be put the three first Times in the Scale of the shorter Arm of the *Balance*, and transferred for the three last Times into the Scale of the longer Arm: It is certain, that each of the first Times the Merchant delivers $9\frac{1}{16}$ Pounds Weight of Merchandize, and each of the three last $10\frac{1}{16}$ Pounds; so that the Merchant delivers $60\frac{3}{16}$ Pounds Weight instead of sixty, and therefore loses two Ounces.

Several Weights hanging at several Distances on one Side, may equiponderate with a single Weight on the other Side; to do this it is required, that the Product of that Weight, by its Distance from the Center, be equal to the Sum of the Products of all the other Weights, each being multiplied by its Distance from the Center.

To demonstrate which, hang three Weights, of an Ounce each, at the second, third, and fifth Divisions from the Center, and they will equiponderate with the Weight of one single Ounce applied at the tenth Division of the other Brachium; and the Weight of an Ounce at the sixth Division, and another of three Ounces at the fourth Division, will equiponderate with a Weight

of two Ounces on the other Side at the ninth Division. Several Weights unequal in Number on either Side, will equiponderate: In this Case, if each of them be multiplied by its Distance from the Center, the Sums of the Product on either Side will be equal; and if those Sums be equal, there will be an *Æquilibrium*.

To prove which, hang a Weight of two Ounces at the fifth Division, and two others, each of one Ounce, at the second and seventh; and on the other Side hang two Weights, each also of one Ounce, at the ninth and tenth Divisions; and these two will equiponderate with those three.

To the *Justness* of a *Balance* it is required, that the Points of Suspension be exactly in the same Line as the Center of the *Balance*; that they be precisely equidistant from that Point on either Side; that the Brachia be as long as conveniently they may, that there be as little Friction as possible in the Motion of the Beam and Scales; and lastly, that the Center of Gravity of the Beam be placed a little below the Center of the Motion.

A *LEVER*, is an inflexible right Line, supported in a single Point, on a Fulcrum or Prop, and used for the raising of Weights; being either void of Weight itself, or at least having such a Weight as may be commodiously counter-balanced.

In a *Lever* there are three Things considered; the *Weight* to be raised or sustained, the *Power*, by which it is raised or sustained, and the *Fulcrum* or Prop, whereon the *Lever* is sustained, or rather on which it moves round, the Fulcrum remaining fix'd.

Levers are of three Kinds; sometimes the *Fulcrum* *b* is placed between the Weight *a* and the Power *c*, fig. 5. this we call a *Lever of the first Kind*. Sometimes the Weight *c*, is between the *Fulcrum* *b*, and the Power *a*; which is called a *Lever of the second Kind*, as in fig. 6. And sometimes the Power acts between the Weight and the Fulcrum *b*, fig. 7. which is, the *Lever of the third Kind*.

In the first Kind of *Levers*, fig. 5. so much as the Distance *a b* surpasses the Distance *c b*, as much the Power *a* surpasses the Weight *c*. Therefore if the Space *a b*, which is between the Power *a*, and the Point fix'd *b*, is ten Times longer than the Space *c b*, which is between the Fulcrum *b* and the Weight *c*, and that Weight *c* be considered as a hundred Pounds Weight, provided the Power *a* be equivalent to ten Pounds and a little more, it will surpass the Weight *c* and raise it, provided that when the Power *a* shall descend by ten Ounces or Inches, and a little more, the Point *c* be risen of an Ounce or an Inch Breadth only, because whatever increase the Power acquires, proceeds either from the greater Space or Velocity, or from the Length of Time.

The same must be said of the second Kind of *Lever*, because as the more the Distance *a b*, fig. 6. surpasses the Distance *c b*, more efficaciously and easily the Power *a*, surpasses the Weight *c*.

The third Kind of *Levers* do not render the Power *a* fig. 7. more efficacious; but rather increase the Weight *c*, and adds Strength to it, because the Distance of the Power *a* from the Point fix'd *b*, is lesser than the Distance of the Weight *c*, from the same Point fix'd *b*; but in that Case the Power must run through less Space than the Weight.

It appears by the sole Inspection that the Roman *Stratera* is a *Lever* of the first Kind; for in the *Forceps*, *a b c d*, fig. 3. there are two *Levers* of the first Kind, which have but one Hypomachlion, viz. in the Point *c*, round which each Arm of the *Forceps* is turned; and the lesser is the Distance *a d*, than either *a b* or *a c*, the better the Power applied in *b* and *c*, counter-balance the Body placed in *d*.

A Knife placed by one of its Sides in the Point *a*, fig. 6. so that it may incline towards that Point, shews the second Kind of *Lever*; in which, if the Power be applied in *c*, and a Piece of Bread, or some other Thing like it, be placed in *b*, the more the Power will be distant from the Point fixt *a*, the stronger the Power will act.

Note, That from what I have said relating to the different Kinds of *Levers*, it may be easily inferred, 1. That

1. That when we use a *Lever* of the first Kind, the Power can be greater or lesser than the Weight, according as the Distance of the Weight is greater or lesser than that of the Power.

2. That when we use a *Lever* of the second Kind, the Distance of the Weight is necessarily lesser than the Distance of the Power, as the Power is necessarily lesser than the Weight.

3. On the contrary, when we make use of a *Lever* of the third Kind, the Distance of the Weight is necessarily greater than the Distance of the Power, as the Power is necessarily greater than the Weight.

Axis in peritochio, is a Machine or *mechanical* Instrument proper, in which the Cylinder *b i*, fig. 9. called the *Axis*, is sustained at both Ends by the Fulcrum's *k l*. With the Circle in *c*, called the *Peritochium*, in the Circumference whereof are made Holes, to which are fitted the Spokes, or *Radii*, *a m c*, *b m d*, to which the Force being applied it winds up a Rope round the *Axis*, whereby the Weight, &c. is to be raised.

The *Axis in Peritochio*, takes Place in the Motion of every Machine, where a Circle may be conceived described about a fixed *Axis*, concentrick to the Plane of a Cylinder, about which it is placed, as in Crane-Wheels, Mill-Wheels, Capstons, &c.

Nothing more easy than to shew that the *Axis in Peritochio*, as we represent it here, is to be referred to the *Lever* of the first Kind. For the Point fixt is in the Middle of the Circle and *Axis*, viz. in the Point *a f*. For when the Cylinder is turned round, innumerable fixt Points can be conceived in it from the Extreme *b* to *i*, or rather in lieu of Points fixt, is to be conceived a middle fixt and immoveable Line from *b* into *i*, round which the Cylinder is turned. The Power is in *a* or in *b*, &c. and recedes from the Point fixt, or the middle immoveable Line, not only the whole Semi-diameter of the *Axis* and the Circle, but besides of the whole Length of the Spoke *a m* or *b m*, &c. the Weight placed in the Point of the Superficy *e*, and is removed of the sole Semi-diameter *c f*, from the Point fix'd *f*. Whence the more the Distance *a m* surpasses the Distance *c f*, the easier the Power applied in *a* surpasses the Weight, which is understood to be placed in *e*; and the greater the Radius, the more Increase will the Power acquire.

But if a Periphery be put round the Extremes *a b c* to make an entire Wheel, which several Men could turn round, it would be nothing more but continued. The same must be said of those large Wheels, which Men, shut up in them, turn round with their Feet, to draw up by means of a Cable, immense Weights, viz. either Stones from Quarries, or Beams at the Top of Houses, &c.

The *Pulley*, fig. 10. is a Machine consisting of a little Wheel or Rundle, having a Channel round it, and turning on an *Axis*, serving by means of a Rope which slides in its Channel, for the raising of Weights.

If the *Pulley* be simple, i. e. if it has but one Wheel or Rundle (for some of them have several Rundles) which Rundle turns round an immoveable *Axis*, such a *Pulley* does not increase the Power; for the Motion of the Weight *e* is equal to that of the Power *a*, and the Ascent of *e* equal to the Descent of *a*. Whence all the Advantage arising from such a Machine, consists only in that the Rope does not wear off, and that it turns easier round the Orb *b d*.

Hence a single *Pulley*, if the Lines of Direction of the Power and the Weight be Tangents to the Periphery neither assists nor impedes the Power, but only changes its Direction.

The Use of the *Pulley* therefore is, when the vertical Direction of a Power is to be changed into an horizontal one, or an ascending Direction into a descending one, and on the contrary.

This is found a good Provision for the Safety of the Workmen employed in drawing with the *Pulley*. For, suppose a large Weight required to be raised to a great Height by Workmen pulling a Rope; if now the Rope should chance to break, the Workmen's Heads underneath would be in immediate Danger; but if by means of a *Pulley*, the vertical Direction be changed into an horizontal one, there is no Danger from the Rope breaking.

This Change of Direction by means of a *Pulley*, has this further Advantage, that if any Power can exert more Force in one Direction than another, we are here able to employ it in its greatest Force.

Thus, e. gr. a Horse cannot draw in a vertical Direction, but draws with all its Advantage in an horizontal one; by changing the vertical Draught therefore into an horizontal one, a Horse becomes qualified to raise a Weight.

But the great Use of the *Pulley* is, where several of them are combined; thus forming what *Vitruvius* and others after him called *Polyspasta*; the Advantages whereof are, that the Machine takes up but little Room, is easily removed, and raises a very great Weight.

As in my 10th Figure, where there are two Rundles, whose *Axis* is immoveable, viz. *a*, and the other whose *Axis* is mobile, viz. *b*, of which a Weight, v. gr. of a hundred Pounds, depends; therefore if the Rope be tied at one End to the Nail *c*, and the other End be pulled by the Power, I say, that the Force of fifty Pounds in the Power *f*, is equivalent to the Weight *d* of a hundred Pounds; or the Force of the Hand *f* is double that it should have without the Assistance of the mobile Rundle; for when the Ratio of the Velocity or Space, and of the Weight or Bulk is reciprocal between the Power and the Weight, they are in *Æquilibrium*. For if the Weight be of a hundred Pounds, and the Power *f* of fifty only, i. e. if the Weight be double the Power, the Power will move with double the Celerity of the Weight, because while the Weight *d* is lifted up through that Interval which is between *b* and *a*, the Power *f* will bring up two Segments of the Rope, viz. *b g* and *i l*, which together are equal to double the Space *b a*; and therefore will be moved twice faster: Therefore its Force will be double, and if it be heavier than fifty Pounds, it will lift up the Rundle *b* with the Weight *d*.

If there be two mobile Rundles, *c* and *d*, fig. 11. a Rope be tied to the immoveable *Axis* of the Rundle *b*, which may be carried round as well by the two mobile Rundles *c* and *d*, as by the immoveable *a* and *b*, and drawn by the Power *o e*; I say, that the Force of the Power *o* is quadruplicate. For to raise up the Weight *e* from the Point *c* to the Point *b*, the Power *o* must pull four Segments of the Rope, viz. *f g*, *b i*, *k l*, and *m n*, equal to the Altitude *c b*; therefore the Power must move four Times faster than the Weight.

But we must observe, that the immoveable Rundles neither increase nor diminish the Force of the Power, but all Increase of that Kind proceeds from the moveable Rundles, in the combined *Pulleys*; and that Force increases in Proportion as the Velocity of the Power exceeds the Velocity of the Weight.

The *WHEEL*, is a simple Machine consisting of a round Piece of Wood, Metal or other Matter, which revolves on an *Axis*.

The *Wheel* is one of the principal Powers of *Mechanicks*. It has Places in most Engines; in Effect, it is of an Assemblage of *Wheels*, most of our chief Engines are composed, witness Clocks, Mills, &c.

Its Form is various according to the Motion it is to have, and the Use it is to answer. By this it is distinguished into *simple* and *dented*.

Simple Wheels are those, whose Circumference and *Axis* is uniform, and which are used singly, and not combined. Such are the *Wheels* of Carriages, which are to have a double Motion; the one circular about their *Axis*, the other rectilinear; by which they advance along the Road, &c. which two Motions they appear to have, though in effect they have but one, it being impossible the same Thing should move, or be agitated two different Ways at the same Time.

This one is a spiral Motion, as is easily seen by fixing a Piece of Chalk on the Face of the *Wheel*, so that it may draw a Line on a Wall, as the *Wheel* moves. The Line it here traces is a just Spiral, and still the more Curve as the Chalk is fixed nearer the *Axis*. A very nice Phenomenon of the Motion of this *Wheel* is seen in *Rota Aristotelica*, which is the Name of a celebrated Problem in *Mechanicks*; thus called, because first, that we know of, taken Notice by *Aristotle*.

The Difficulty is this; while a Circle makes a Revolution on its Center, advancing at the same Time in a

right Line along a Plane; it describes on that Plane a right Line equal to its Circumference. Now if this Circle, which we may call the *Deferent*, carry with it another smaller Circle concentrick with it, and which has no Motion but what it receives from the *Deferent*; which is the Case of the Nave of a Coach-Wheel carried along by the *Wheel*; this little Circle or Nave, will describe a Line in the Time of the Revolution equal, not to its own Circumference, but to that of the *Wheel*; for that its Center advances in a right Line, as fast as that of the *Wheel* does, as being in Reality the same therewith.

The Matter of Fact is certain: But how it should be done seems a Mystery. It is obvious, that the *Wheel* advancing during the Revolution, must describe a right Line equal to its Circumference; but how should the Nave, which revolves like the *Wheel*, describe a right Line much greater than its Circumference.

The Solution *Aristotle* gives is no more than a good Explication of the Difficulty. *Galileo*, who next attempted it, has Recourse to an Infinity of infinitely little Vacuities in the right Line described by the two Circles, and imagines that the little Circle never applies its Circumference to those Vacuities; but in Reality only applies it to a Line equal to its own Circumference, tho' it appears to have applied it to a much larger.

But it is evident this is all *gratis dictum*. The Vacuities are imaginary, and why does not the great Circle apply its Circumference to them? Lastly, the Magnitude of these Vacuities must be augmented or diminished, according to the different Proportion of the two Circles.

F. Tacquet will have it, that the little Circle making its Rotation more slowly than the great one, does on that Account describe a Line longer than its Circumference; yet without applying any Point of its Circumference to more than one Point of its Base: But this is no more allowable than the former.

The Attempts of so many great Men proving vain; *M. Dortus de Meyran*, a French Gentleman, had the good Fortune to hit on a Solution which he sent to the Academy of Sciences, where being examined by Mess. *de Louville* and *Salmon*, appointed for that Purpose, they made their Report that it was satisfactory. The Solution is to this Effect.

The *Wheel* of a Coach is only acted on, or drawn in a right Line, inasmuch as it defeats that Direction; of Consequence the Causes of the two Motions, the one right, the other circular, are equal, and therefore their Effects, *i. e.* the Motions are equal. And hence, the *Wheel* describes a right Line on the Ground equal to its Circumference.

For the Nave of the *Wheel*, the Case is otherwise. It is drawn in a right Line by the same Force as the *Wheel*, but it only turns round, because the *Wheel* turns, and can only turn with it, and at the same Time therewith. Hence it follows, that its circular Velocity is less than its rectilinear one.

Since then it necessarily describes a right Line equal to that of the *Wheel*, it can only do it by sliding, or what they call the Motion of the *Rafon*. That is, a Part of the circular Nave cannot be applied to a Part of a right Line greater than itself, but by sliding along that Part; and that more or less, as the Part of the Nave is less than that of the Circle.

We shall add, that in *simple Wheels* the Height should always be proportioned to the Stature of the Animal that draws or moves them. The Rule is, that the Load, and the Axis of the *Wheel* be of the same Height with the Power that moves them; otherwise the Axis being higher than the least Part of the Load will lie on him, or if it be lower he pulls to Disadvantage, and must exert a greater Force: Though *Stevinus*, *Dr. Wallis*, &c. shew, that to draw a Vehicle, &c. over waste, uneven Places, it were best to fix the Traces to the *Wheels* lower than the Horse's Breast.

The Power of these *Wheels* results from the Difference of the Radii or Spokes of the Axis and Circumference. The Canon is this: 'As the Radius of the Axis is to that of the Circumference, so is any Power to the Weight it can sustain hereby.'

This is also the Rule in the Axis in the *Peritochio*, and in effect, the *Wheel* and the Axis in *Peritochio* are

the same Thing; only in Theory, it is usually called by the latter Name, and in Practice by the former.

Dented Wheels, are those either whose Circumference or Axis is cut into Teeth, by which they are capable of moving and acting on one another, and of being combined together. The Use of these is very conspicuous in Clocks, Jacks, &c.

The Power of the *dented Wheel* depends on the same Principle as that of the simple one. It is only that to the simple Axis in *Peritochio*, what a combined Lever is to a simple Lever.

Its Doctrine is comprized in the following Canon, *viz.* 'The Ratio of the Power to the Weight,' in order for that to be equivalent to this, 'Must be compounded of the Ratio of the Diameter of the Axis of the last Wheel to the Diameter of the first; and of the Ratio of the Number of Revolutions of the last Wheel to those of the first in the same Time.' But this Doctrine will deserve a more particular Explication.

Suppose the Weight *a*, fig. 12. which by its Force can raise one Pound, and is understood to move the *Wheel b*, and the little *Wheel c* joined to its Axis; if we suppose that there are only ten Teeth in the little *Wheel c*, and an hundred in the *Wheel b*, very well adapted to the former and joined to them; it will happen hence, that while the small *Wheel c* turns ten Times round, the great *Wheel d* will turn but once. Likewise if the same Ratio be put between the small *Wheel c*, joined to the *Wheel d*, and between the *Wheel f* implicated to it, then while the small *Wheel c*, together with the *Wheel d* turn ten Times round, the *Wheel f* will be conceived to turn only once round: Therefore the first *Wheel b* will turn round ten Times swifter than *d*, and the *Wheel d* ten Times swifter than *f*; or which is the same, the *Wheel b* will turn round a hundred Times swifter than *f*.

If a Power moves a Weight by means of divers *Wheels*, the Space passed over by the Weight is to the Space of the Power as the Power to the Weight. Hence the greater the Power, the faster is the Weight moved, and *vice versa*.

The Spaces passed over by the Weight and the Power, are in a Ratio compounded of the Revolutions of the slowest *Wheel*, to the Revolutions of the swiftest; and of the Periphery of the Axis of that, to the Periphery of this. Hence, the Space of the Weight and the Power are reciprocally as the sustaining Power to the Weight, in a Ratio compounded of the Revolutions of the slowest *Wheel*, to those of the swiftest, and of the Periphery of the Axis of that to the Periphery of this.

'The Periphery of the Axis of the slowest *Wheel*, with the Periphery of the swiftest *Wheel* given; as also the Ratio of the Revolutions of the one to those of the other; to find the Space which the Power is to pass over, while the Weight goes any given Length.'

Multiply the Periphery of the Axis of the slowest *Wheel* into the antecedent Term of the Ratio, and the Periphery of the swiftest *Wheel* into the consequent Term; and to those two Products, and the given Space of the Weight find a fourth Proportional: This will be the Space of the Power; suppose, *e. gr.* the Ratio of the Revolutions of the slowest *Wheel* to those of the swiftest, to be as 2 to 7, and the Space of the Weight 30 Feet; and let the Periphery of the Axis of the slowest *Wheel* be to that of the swiftest as 3 to 8, the Space of the Power will be found 280.

'The Ratio of the Peripheries of the swiftest *Wheel*, and of the Axis of the slowest, together with the Ratio of their Revolutions, and the Weight being given; to find the Power able to sustain it.'

Multiply both the Antecedents, and the Consequents of the given Ratios into each other; and to the Product of the Antecedents, the Products of the Consequents, and the given Weight, find a fourth Proportional; that will be the Power required. Suppose, *e. gr.* the Ratio of the Peripheries 8:3. that of the Revolutions 7:2. and the Weight 2000, the Power will be found 214. After the same Manner may the Weight be found, the Power and the Ratio of the Peripheries, &c. being given.

'The Revolutions the swiftest *Wheel* is to perform, while the slowest makes one Revolution, being given; together with the Space the Weight is to be raised, and the

the Periphery of the slowest *Wheel*; to find the Time that will be spent in raising it.

I say, as the Periphery of the Axis of the slowest *Wheel* is to the Space of the Weight given, so is the given Number of the Revolutions of the swiftest *Wheel* to a fourth Proportional; which will be the Number of Revolutions, performed while the Weight reaches the given Height. Then, by Experiment, determine the Number of Revolutions the swiftest *Wheel* performs in an Hour; and by this divide the fourth Proportional found before. The Quotient will be the Time spent in raising the Weight.

Inclined Plane (which I place here, because it has a near Relation to the other three Powers already explained) is a *Plane* which makes an oblique Angle with an horizontal *Plane*: Which *inclined Plane* is to be seen in our Plate of Hydraulicks.

We make use of an *inclined Plane* to raise up, or let fall heavy Bodies with a greater Facility, whereby Part of their Weight is taken away; as Workmen find by Experience and without being taught. For when a great Weight is to be carried to a high Place, they put it on an *inclined Plane*, which *Plane* is sometimes supported with Boards or Cylinders, for the Conveniency of transporting it from one Place to another.

The *Laws of Descent of Bodies on inclined Planes* are,

1. If a Body be placed on an *inclined Plane*, its relative Gravity will be to its absolute Gravity, as the Length of the *Plane* to its Height. Hence, 1. Since a Ball gravitates on the *inclined Plane* with its relative Gravity; the Weight applied in a Direction parallel to the Length of the *Plane*, will retain or suspend it, provided the Weight be to that of the Ball, as the Altitude of the *Plane* is to its Length.

2. The absolute Gravity of the Body is to its retractive Gravity applied on the *inclined Plane*, as the whole Sine to the Sine of the Angle of Inclination.

3. Hence the respective Gravities of the same Body on different *inclined Planes*, are to each other as the Sines of the Angle of Inclination.

4. The greater therefore the respective Gravity is, the greater is the Angle of Inclination.

5. As therefore in a vertical *Plane*, where the Inclination is greatest, viz. perpendicular, the respective Gravity degenerates into absolute; so in an horizontal *Plane*, where there is no Inclination, the respective Gravity vanishes.

To find the Sine of the Angle of Inclination of a *Plane*, on which a given Power will be able to sustain a given Weight. Say, as the given Weight is to the given Power, so is the whole Sine to the Sine of the Angle of Inclination of the *Plane*. Thus, suppose a Weight of 1000 be to be sustained by the Power of 50, the Angle of Inclination will be found 2052.

If the Weight descends according to the perpendicular Direction, and raises up the Weight in a Direction parallel to the *inclined Plane*; the Height of the Ascent will be to that of the Descent, as the Sine of the Angle of Inclination to the whole Sine.

The Powers that raise Weights through Altitudes reciprocally proportional to them, are equal. This *Des Cartes* assumes as a Principle whereby to demonstrate the Powers of Machines; hence we see why a laden Waggon is drawn with more Difficulty on an *inclined* than an horizontal *Plane*; as being pressed with a Part of the Weight, which is to the whole Weight in a Ratio of the Altitude of the *Plane* to its Length.

A heavy Body descends on an *inclined Plane*, with a Motion uniformly accelerated.

Hence, 1. The Spaces of Descent are in a duplicate Ratio of the Times, and likewise of the Velocities; and therefore in equal Times increase according to the unequal Numbers, 1, 3, 5, 7, 9, &c.

2. The Space passed over by a heavy Body descending on an *inclined Plane*, is subduple of that which it would pass over in the same Time, with the Velocity it has acquired at the End of its Fall.

3. Heavy Bodies therefore descend by the same Laws on *inclined Planes*, as in perpendicular *Planes*. Hence it was that *Galileo*, to find the Laws of perpendicular Descents, made his Experiments on *inclined Planes*, in re-

gard to the Motions being slower in the latter than the former, as in the following Theorem.

The Velocity of a heavy Body, bending on an *inclined Plane*, at the End of any given Time; is to the Velocity which it would acquire in falling perpendicularly, in the same Time, as the Height of the *inclined Plane* is to its Length.

The *WEDGE*, fig. 16. is a triangular Prism, whose Bases are equilateral acute-angled Triangles.

Authors are divided about the Principles whence the *Wedge* derives its Power. *Aristotle* considers it as two Levers of the first Kind, inclined towards each other, and acting opposite Ways. *Guido Ulbaldus*, *Merfennus*, &c. will have them Levers of the second Kind. But *F. de Lanis* shews, that the *Wedge* cannot be reduced to any Lever at all. Others refer the *Wedge* to the *inclined Plane*; because, say they, it consists of two inclined *Planes*, whose two Sides terminate in a common right Line. Others again, with *De Stair*, deny the *Wedge* to have scarce any Force at all; and ascribe much the greatest Part to the Mallet that drives it. But the latest Authors agree to refer the Effect of the *Wedge* to the Cochlea or Shell.

Its Doctrine is contained in this Proposition: 'If the Power directly applied to the Head of the *Wedge*, be to the Resistance to be overcome by the *Wedge*, as the Thickness of the *Wedge* is to its Height; then the Power will be equivalent to its Resistance; and if increased, will overcome it.'

For the Firmness whereby the Parts of the Obstacle, suppose Wood, adhere to one another, is the Resistance to be overcome by the *Wedge*.

Hence, if the Thickness of the *Wedge* (that is, the Way of the Impediment, and consequently its Velocity) be to the Height of the *Wedge* (that is the Way, and consequently the Velocity of the Power) as the Power of the Impediment, or Resistance; then the Momentum of the Power, and the Impediment, will be equal the one to the other; and consequently the Power, being increased, will overcome the Resistance.

Hence, 1. The Power equivalent to half the Resistance, is to it as the whole Sine to the Co-tangent of half the Angle of the *Wedge*.—And, 2. As the Tangent of a less Angle is less than that of a greater, the Power must have a greater Proportion to half the Resistance, if the Angle be greater than if less. Consequently the acuter the *Wedge* is, the more does it increase the Power.

To the *Wedge* may be referred all Edge-tools, and Instruments which have a sharp Point, in order to cut, cleave, slit, chop, pierce, bore, or the like; as Knives, Hatchets, Swords, Bodkins, &c.

The *SCREW*, is a right Cylinder, furrowed spiral-wise, chiefly used in pressing or squeezing Bodies close, though sometimes also in raising Weights.

If the furrowed Surface be convex, the *Screw* is said to be *Male*; if concave it is *Female*.

Where Motion is to be generated, the *Male* and *Female* Screws are always joined, that is, whenever the *Screw* is to be used as a single Engine, or mechanical Power. When joined with an Axis in Peritochio there is no Occasion for a *Female*; but in that Case it becomes Part of a compound Engine.

The *Doctrine of the Screw* is,—1. As the Compass described by the Power in one Turn of the *Screw*, is to the Interval or Distance between any two immediate Threads or spiral Winding, so is the Weight or Resistance to the Power; then the Power and the Resistance will be equivalent one to the other; and consequently, the Power being a little increased will overcome the Resistance.

For it is evident, that in one Turn of the *Screw*, the Weight is so much lifted up, or the Resistance so much removed, or the Thing to be pressed is squeezed so much closer together, as is the Distance between two immediate Spirals: And in the same Time the Power to be moved is so much, as is the Compass described by the said Power in one Turn of the *Screw*. Wherefore the Velocity of the Weight (or whatever answers thereto) will be to the Velocity of the Power, as is the said Distance between the Spirals to the Compass described by the Power, in one Revolution, or turning round of the

the *Screw*; so that the gaining in Power is here recompensed by the Loss in Time.

2. As the Distance between two Threads is less, the Power required to overcome the said Resistance is less; therefore the finer the Thread the easier the Motion.

3. If the Male *Screw* be turned in the Female at Rest, a less Power will be required to overcome the Resistance.

4. The Distance of the Power from the Center of the *Screw*, the Distance of two Threads, and the Power to be applied being given, to determine the Resistance it will overcome; or the Resistance being given, to find the Power necessary to overcome it.

Find the Periphery of a Circle described by a Radius, then the Distance between the two Threads, the Periphery just found, and the given Power; or to the Periphery found, the Distance of the two Threads, and the given Resistance, find a fourth Proportional. This in the former Case will be the Resistance that will be overcome by the given Power; and in the latter the Power necessary to overcome the given Resistance.

E. gr. suppose the Resistance between the two Threads 3, the Distance of the Power from the Center of the *Screw* 25, and the Power 30 Pounds, the Periphery of the Circle to be described by the Power, will be found 157: Therefore, as 3, 157: 30, 1570, the Weight to which the Resistance is equal.

5. The Resistance to be overcome by a given Power being given; to determine the Diameter of the *Screw*, the Distance of two Threads, and the Length of the Scytala or Handle: The Distance of the Threads, and the Diameter of the *Screw* may be assumed at Pleasure, if the Male be to be turned in the Female by a Handle: Then as the given Power is to the Resistance it is to overcome, so is the Distance of the Threads to a fourth Number, which will be the Periphery to be described by the Handle, in a Turn of the *Screw*. The Semi-diameter of this Periphery therefore being sought, we have the Length of the Handle; but if the Female *Screw* be to be turned about the Male without any Handle, then the Periphery and Semi-diameter found, will be very nearly those of the *Screw* required.

E. gr. Suppose the Weight 6000, the Power 100, and the Distance of the Threads 2 Lines; for the Periphery to be passed over by the Power, say, as 100, 6000: 2, 120; the Semi-diameter of which Periphery being $\frac{1}{2}$ of 120 = 40 Lines will be the Length of the Handle, if any be used; otherwise the Side of the Female *Screw* must be 40 Lines.

There are, besides the above-mentioned *Screws*, the *endless Screw*, and *Archimedes's Screw*.

The *endless Screw*, is a *Screw* fitted to turn a dented Wheel, called *endless*, or *perpetual*, in regard it may be turned for ever, without coming at an End. From the Scheme it is evident enough, that while the *Screw* turns once round, the Wheel only advances the Distance of a Tooth.

The *Doctrine of the endless Screw*, is:—If the Power applied to the Lever, or Handle of an *endless Screw*, be to the Weight, in a Ratio compounded of the Periphery of the Axis of the Wheel, to the Periphery described by the Power, in turning the Handle, and of the Revolutions of the Wheel, to the Revolutions of the *Screw*, the Power will be equivalent to the Weight.

Hence, 1. As the Motion of the Wheel is exceedingly slow, a small Power may raise a vast Weight, by Means of an *endless Screw*: For this Reason, the great Use of the *endless Screw*, is either where a great Weight is to be raised through a little Space; or where a very slow, gentle Motion is required: On which Account it is very useful in Clocks and Watches.

2. The Number of Teeth, the Distance of the Power from the Centre of the *Screw*, the Radius of the Axis, and the Power being given, to find the Weight it will raise.

Multiply the Distance of the Power from the Centre of the *Screw* into the Number of Teeth: The Product is the Space of the Power passed through, in the Time the Weight passes through a Space equal to the Periphery of the Axis. Find a fourth proportional to the Radius of the Axis, the Space of the Power now found and the Power; this will be the Weight the Power is able to sustain.

Archimedes's Screw, or the *Spiral Pump*, is a Machine for the raising of Water, invented by *Archimedes*. Its Structure is as follows:

A leaden Tube is wound round a Cylinder, after the same Manner as the spiral Thread is drawn in the common *Screw* above described. This Cylinder is inclined to the Horizon in an Angle of about 15 Degrees, and the Orifice of the Tube immersed under Water. If then the *Screw* be turned about by the Handle, against the Water; the Water will raise up the Spiral and be discharged at the other Orifice of the Cylinder.

This Machine (whose Figure is the Second in the Plate of *Hydraulicks*) with a very little Strength, is able to raise a great Quantity of Water: Whence it is found of good Use in emptying of Lakes, &c.

If the Water be to be raised to any considerable Height, one *Screw* will not suffice; but the Water drawn up by one, is to be taken by another, and so successively.

Note, As the *Mechanicks* are founded on Motion, Attempts have been made, from Time to Time, to find out a *perpetual Motion*, i. e. a Motion which is supplied and renewed from itself, without the Intervention of any external Cause; or in an uninterrupted Communication of the same Degree of Motion from one Part of Matter to another, in a Circle (or other Curve returning it into itself) so as the same Momentum still returns undiminished upon the first Mover.

To find a *perpetual Motion*, or construct an Engine, &c. which shall have such a Motion, is a famous Problem that has employed the Mathematicians for 2000 Years; though none perhaps have prosecuted it with Attention and Earnestness equal to those of the present Age.

Infinite are the Schemes, Designs, Plans, Engines, Wheels, &c. to which this longed for *perpetual Motion* has given Birth: It were as endless as impertinent to give a Detail of them all, nor does any of them deserve particular Mention, since they have all equally proved abortive: It would rather be of the Nature of an Affront than a Compliment, to distinguish the Pretenders hereto; when the very Thing they are commemorated for, carries with it so disagreeable an Idea.

In effect, there seems but little in Nature to countenance all this Assiduity and Expectation: Among all the Laws of Matter and Motion, we know of none yet, which seems to lay any Principle or Foundation for such an Effect.

Action and Re-action are allowed to be ever equal, and a Body which gives any Quantity of Motion to another, loses just so much of its own; but under the present State of Things, the Resistance of the Air, the Friction of the Parts of Machines, &c. do necessarily retard every Motion.

To keep the Motion on Foot, therefore, either 1st, there must be a Supply from some foreign Cause; which in a *perpetual Motion* is excluded.

Or, 2dly, all Resistance from the Friction of the Parts of Matter, must be removed, which implies a Change in the Nature of Things.

For, by the second Law of Nature, the Changes made in the Motions of Bodies, are always proportional to the impressed moving Force, and are produced in the same Direction with it; no Motion then can be communicated to any Engine greater than that of the first Force impressed.

But on our Earth all Motion is performed in a resisting Fluid, and must therefore of Necessity be retarded; consequently a considerable Quantity of its Motion will be spent on the Medium.

Nor is there any Engine or Machine, wherein all Friction can be avoided, there being in Nature no such Thing as exact Smoothness, or perfect Congruity; the Manner of the Cohesion of the Parts of Bodies, the small Proportion the solid Matter bears to the Vacuities between them, and the Nature of those constituent Particles not admitting it.

This Friction therefore will also in Time sensibly diminish the impressed, or communicated Force; so that a *perpetual Motion* can never follow, unless the communicated Force be so much greater than the generating Force, as to recompense the Diminution made therein by

by all these Causes: But *nil dat quod non habet*, the generating Force cannot communicate a greater Degree of Motion than it has itself.

The whole Business of finding a *perpetual Motion*, therefore, comes to this, *viz.* to make a Weight heavier than itself, or an elastick Force greater than itself.

Or, 3dly, and lastly, there must be some Method of gaining a Force equivalent to what is lost, by the artful Disposition, and Combination of *Mechanick Powers*: To which last Point, then, all Endeavours are directed: But how, or by what Means such Force should be gained, is still a Mystery!

The Multiplication of Powers or Forces, it is certain, avails naught; for what is gained in Power, is still lost in Time; so that the Quantity of Motion still remains the same.

All *Mechanicks* cannot really make a little Power equal, or superior to a larger; and wherever a less Power is found in Equilibrio with a larger, *v. gr.* twenty-five Pounds with a hundred, it is a Kind of Deception of the Sense: The Equilibrium is not strictly between one hundred and twenty-five; but between one hundred Pounds and twenty-five moving, or disposed to move four Times as fast as the one hundred.

To consider the Weights one hundred, and twenty-five, as fix'd and immoveable; the twenty-five may seem, some how, raised beyond themselves; which is one of the sham Miracles of *Mechanicks*, that has deceived Millions; but which is easily dissipated, by considering the four Degrees of Velocity, which are to be given to the twenty-five Pounds, and which require a Force equal to the Excess of one hundred above twenty-five Pounds.

A Power of ten Pounds moved with ten Times the Velocity of the one hundred Pounds, would have equalled them in the like Manner; and the same may be said of all the possible Products equal to one hundred. But, in fine, there must still be one hundred Pounds of Power on each Side, what Way soever they be taken, whether in the Matter, or in the Velocity.

This is an inviolable Law of Nature; by which nothing is left to Art, but the Choice of the several Combinations that may produce the same Effect.

APPENDIX.

Note, That though *Motion* does not make Part of the *Mechanicks*, notwithstanding as it is the Foundation thereof, it will not be improper to add to this Treatise, by way of *Appendix*, what relates to a *Local Motion*, its Affections, Causes, &c.

Local Motion, is a continued and successive Change of Place.

I say, a continued and successive Change of Place, *viz.* through a Space which is between the Term at which the Motion begins, and that at which the Motion ends; which Space is not, in fact, distinguished from the physick Bodies themselves, but mentally only, and mathematically; inasmuch as the sole Extension thereof is considered, and not the other physical Qualities; for no *Motion* is understood beyond Continuity and Succession. For if God, *v. gr.* was to produce, or preserve at *Rome*, the same Body which is in *London*, without passing through intermediate Places, tho' there would be a Change of Place, there would be no Mutation, because there were not a Passage from one Place to another.

Philosophers, both antient and modern, agree among themselves, that the *local Motion* is a certain State, or Manner of the mobile Body, whereby it corresponds successively to several different Places: But whether *Rest* be something real and positive, is what is much controverted. *Aristotle*, *lib. 5. Physic. c. 8.* and all the *Peripateticians* believe, that *Rest* is nothing but a Privation of *Motion*. And *Des Cartes* is of Opinion, that *Rest* is no less real and positive than *Motion* itself. In which Controversy I'll chuse the Medium: For *Rest*, as I take it, can be defined *the remaining of a Body in the same Place or Space*: Therefore it can be called either a State, or Manner, or Relation; and not a sole Privation of Motion, as *Aristotle* imagined it; much less is it to be considered, as some positive or real Faculty in a Body,

whereby it can act or resist, as *Des Cartes* will have it.

It may be objected against my Sentiment, by the *Peripateticians*, that *Rest* consists in that which once admitted, its Nature is easily understood; as it happens by admitting only the Privation of Motion, as Darkeness is understood by admitting only the Privation of Light.

To which I answer, that neither *Rest* is understood by the sole Privation of *Motion*, nor *Motion* understood, by the sole Privation of *Rest*, but either State is positive; one whereby a Body corresponds to the different Parts of the Place, and the other whereby it corresponds to the same Parts of a Place; one or the other of those Manners being always in a Body. For if it ceases from moving it rests, and if it ceases from resting it is moved: Whence *Motion* and *Rest* alternately succeed each other in a Body.

As to what is said, that Darkeness is a Privation of Light, it wants Explication. Darkeness is a Privation of Light, if considered comparatively to our Senses, but not as considered as it is in dark Bodies: For either State of Light or Darkeness, is positive in some Bodies, *v. gr.* in the Air. In the first State the Parts of a Body are moved with Celerity; in the second they either rest, or are moved more slowly.

The *Cartesians* will object, that when a Body which is at *Rest* is impelled by some mobile Body and breaks the *Motion* thereof, it is said to resist it; which Faculty of resisting proceeds from the Parts being at *Rest*; and therefore that *Rest* is a positive Faculty in a Body whereby it resists to Motion.

To which I answer, that a Body at *Rest* is said to resist to a mobile Body, inasmuch as the *Motion* of the mobile Body distributed in every Part of the Body at *Rest*, produces in it an almost insensible shaking; but not as if the Body at *Rest* had some *Re-action*, as they call it, or some active Faculty for the Elision of the *Motion* of the mobile Body. I agree that there is no other Faculty in a Body at *Rest* but the *Rest* of the Parts; which Faculty is only a passive Power; but I deny that it is an active one: Therefore a Body at *Rest* is said to resist a Body in Motion, because the *Motion* of the mobile Body being distributed throughout all the Parts of the Body at *Rest*, becomes sometimes insensible; as when a leaden Ball is fired against a Wall built with very hard Stones, let the Velocity of the Ball be ever so great, it being notwithstanding distributed throughout all the Parts of the Stone, scarce produces a sensible Quaking: But a Body at *Rest* does not resist a Body in Motion, as by some active Faculty whereby it re-acts into it. For to *Re-action* is required, a *tonick Motion* at least, such as that which happens in a Tree; which if bowed in one Part, and some body endeavours to bow it on the opposite Part, it happens then a true and proper *Re-action*, because the Tree resists by its *tonick Motion*.

Note, That *Tonick* is a Term used in Medicine, and applied to a certain Motion of the Muscles, wherein the Fibres being extended, continue their Extension in such Manner, as that the Part seems immoveable, though in Reality it be in Motion. Such is the Case of a Man standing, of Birds plating or swimming through the Air, &c. *Galen* says, that the Muscles act even when at *Rest*; for after having made any Contraction to fix themselves in a certain State or Disposition, the preserving of that Contraction, is what we call the *tonick Motion*.

It may be urged, with *Des Cartes*, *secund. part. princip. num. 49.* that a less Body, with whatever Velocity it may be carried against a greater at *Rest*, it never can communicate its *Motion* to the greater Body at *Rest*, and the more the Velocity of the lesser Body is increased, the greater grows the Resistance and *Rest* of the larger Body; therefore that *Rest* is some active Faculty or Power in a Body at *Rest*, as Motion is an active Faculty in a mobile Body.

To this I answer, that the Objection is the fourth Rule of the Communication of *Motion*, established by *Des Cartes*, which I will refute both by Reason and Experience. By Reason, because the Velocity of the lesser Body can be such, that being distributed throughout all the Parts of the larger Body at *Rest* equal to itself, it

moves them all, and consequently the whole Body. By Experience, because if a soft Body, *v. g.* with three Degrees of Velocity, be thrown against another soft Body twice bigger than itself, it will communicate to it two Degrees of its Velocity, and both as if they were united into a Body triple the former, will be moved by one Degree of Velocity towards the same Part; for the Velocity decreases, in Proportion the Volume of the Body, in which it is distributed, increases. Therefore if a greater Body is said to resist more in *Motion* than a lesser, it must be taken in almost the same Sense, as a greater Heap of Earth, is more difficult to be drenched with Water than a Handful; since the Effect must correspond to the Cause; so that the greater is the Heap of Earth, the more Water is required to penetrate it, not that the Earth has any Faculty to hinder the Water from penetrating; but the greater the Heap is, the greater must be the Quantity of Water to penetrate it: Likewise the *Motion* must be distributed throughout all the Parts of a Body at Rest, to be carried from one Place to another; and the greater is the Number of Parts to which the *Motion* is to be communicated, the greater must be the Quantity of *Motion*.

To understand better the Nature of *Motion* and *Rest*, it is necessary to say something of *Time* and *Place*.

As *Motion* is the Translation of a Body from one Place to another, which wants Time to be accomplished; we should, therefore, understand the Nature of *Time* and *Place*.

TIME, is the successive Duration of a Thing which has a Beginning, and which can have an End. It is called a successive Duration, because Time does not exist together. 2. Which has a Beginning, and can have an End, because Time belongs to created Things, which God has formed of nothing, and can reduce to nothing.

The Name of *Place* is ambiguous; for sometimes it signifies the Superficies of a Body wherein another Body is contained, sometimes a Space which can be occupied by all Sorts of Bodies; the first is called an *internal Place*, and the other *external*.

Gassendus, *Señ. prim. Phys. lib. 2. c. 1.* with *Epicurus* and all the *Epicureans*, pretend, that there is properly no other Place but the internal, because all the Bodies are properly contained in an *external Space*, and penetrated by it. But those who reject the *Vacuum*, as fictitious, as do the *Cartesians* and *Peripateticians*, admit no other than the *external Place*.

Aristotle takes Notice only of the *external Place*, *Phys. lib. 4. c. 6.* where he defines *Place*, the first immobile Term of the ambient Body; i. e. the first and internal Superficies of a Body containing another Body; that interior Superficies is called *concave*, and the other *convex*. *Place* is called *immobile* by *Aristotle*, because it is not carried, by the Motion, together with the Body, but is like an immobile Vessel; as, on the contrary, a *Vessel* is like a *mobile Place*. But how that Immobility of the external Place can remain with the Mobility of the Bodies, is very difficult to explain.

The *Thomists*, to defend it, have Recourse to certain immobile Parts of the Universe, *viz.* to the Poles of the World, around which the Heavens are said to turn in the *Ptolemaick System*.

Others add to the two Poles, four Points; *viz.* the Point of the East, the Point of the West, the vertical Point or *Zenith*, and the Point opposed to it, or *Nadir*; and say, that a Body is at *Rest*, when it keeps the same Distance to those Points; and is in *Motion*, when it changes that Distance.

Others, lastly, establish the divine Immensity, diffused by its Parts, or *virtual Points*, as well within, as beyond this World, for Rule of the Immobility of a Place; and imagine that a Body is moved, when applied to different Points of that Kind; and is at Rest, when it is joined to those same Points, and is penetrated by them.

However, all these Explications shew, how a located Body can sometimes be said to be at *Rest*, and sometimes in *Motion*; but do not attribute the Immobility to the Superficies of the Body wherewith it is environed, which is properly its Place; which notwithstanding is the present Difficulty: Therefore I believe that what I have said before to explain *Motion*, can be used here, to explain the Nature of *Place*: Therefore,

I consider the Superficies of the ambient Body in two Manners, *viz.* *Physically*, and *Mathematically*.—It is considered *Physically*, when considered in a physical Body, endued with several sensible Qualities, *viz.* Fluidity, Mobility, &c. and *Mathematically*, when considered as in an extended Substance, or in the sole Extension, abstracted mutually, from sensible Qualities: These presupposed,

I say, that the *external Place*, or *Place* properly called, *viz.* the concave Superficies of an ambient Body containing another Body, is in fact, and *physically* mobile, because it is continually moved, as it appears either in the Air we are environed with, and which is agitated around us; or in running Water, which washes the Piles of a Bridge.

But the *external Place* considered *Mathematically*, can be conceived immobile, because in it the sole Extension is considered, as abstracted from the rest of the physical Qualities, *viz.* Fluidity, Mobility, &c.

COROLLARY.

When *Motion* is defined the Translation of a Body from a Place into another, *Place* is considered *mathematically*, not *physically*.

From this I'll pass to the principal Affections of *Motion*.

The principal Affections of *Motion* are, its *Quantity*, *Determination*, *Reflection*, and *Refraction*.

The *Quantity of Motion*, is the Answer to the Question, *How great is the Motion*, or that whereby any *Motion* compared with another, is said to be either greater or less than that it is compared with. And this is to be taken from two Chiefs, *viz.* from the Bulk or Weight of a mobile Body, and from the Velocity of the Motion.

Therefore if the two Bodies A and B, fig. 16. are equal in Bulk, and are moved with an equal Celerity, there will be as much *Motion* in one as there is in the other; but if one of them, *viz.* A, is moved with twice the Celerity of the other, it will have twice the Quantity of Motion B has. Likewise if both be carried with the same Velocity, and one be twice or thrice, or four Times the other, it will have twice, thrice, four Times, the Quantity of Motion.

For if some Force is used to throw, *v. gr.* a Body of a Pound Weight at fifty Feet Distance, within the Time of the second of an Hour, the same Force must necessarily be double, to throw it within the same Time, at a hundred Feet Distance; and then the Quantity of Motion in it will be double.

For the same Reason, if a Body of a Pound Weight be carried with a certain Force, within a Minute's Time to two hundred Paces, certainly a Body of two Pounds will be moved, and within the same Time, to a hundred Paces; notwithstanding which there will be the same Quantity of Motion in both, because the Force of the lesser Weight is followed with a greater Velocity. Therefore the Particles of the first Element of *Des Cartes* must be moved with a far greater Celerity with the same Quantity of Motion, than those of the second Element, because the first Element is much thinner than the second.

Though you cannot say absolutely therefore, what Quantity of *Motion* there is in a Body, you can notwithstanding have this Rule, that you may be capable to define what Quantity of Motion there is in it comparatively to another Body. For if you multiply the Velocity of the Motion by the Bulk or Weight of the Body, the *Product* then will give the Quantity of the *Motion*, *v. gr.* let it be a Body of two Pounds, which has three Degrees of Velocity: Likewise, let it be a Body of four Pounds, moved with three Degrees of Velocity. If you multiply the three Degrees of Velocity by the two Pounds, you'll have six Degrees of Velocity for the first Body: Likewise if you carry the three Degrees of Velocity into four Pounds, you'll have 12 Degrees of Motion for the second Body.

The *DETERMINATION of Motion*, is the Direction thereof towards one Part, rather than towards another. Whence *Motion* is taken from the impulsive Faculty, which is sometimes greater and sometimes lesser; and the *Determination* is to be deduced from the Manner whereby

whereby the Impulsion is made, *v. gr.* when a Ball is thrown with the Battler against a Wall, the *Motion* proceeds from the Blow or Percussion; but the *Determination* depends on the Manner of throwing it, *viz.* from the different Situation of the Battler, which Situation causes that the Fall describes one Line rather than another. For nothing hinders a Motion which is not interrupted, from being preserved in a mobile Body, though the *Determination* be changed; *v. g.* when a Ball falls obliquely into a Wall and returns back, the *Determination* thereof is changed, though the same Motion continues.

Hence, though *Motion* with regard to itself is to be said *simple*, and the mobile describes one Line only, either right or curve, when moved from one Point into another, we notwithstanding conceive sometimes two or more *Determinations* in it; and the *Motion* is said to be composed in some Manner, of those two or more *Determinations*, *viz.* where two or more Causes endeavour to move separately one and the same Mobile into different Parts, *v. g.* if one would cross a River from B to D, fig. 18. and be carried by almost the same Rapidity of the Water into G, whereby he is carried into D; then he'll follow neither the right Line A G, nor the right A D, but the Line A K. For if he had arrived at first by his own Strength to the Point B, he should have arrived at the Point E by the Strength of the River. Therefore to answer those two Motions, *i. e.* to arrive at the Point D, through that Interval, which is between A and B; and to the Point G, through that Interval, which is between A and E, it is certainly necessary, that he should be at the first Instant in the Point H, at the second Instant in the Point I, and at the third in K.

This composite Motion is of great Consequence in the throwing of Bodies; For, *v. gr.* when the Bullet of a Cannon is exploded, it is understood to be moved by a double Power, *viz.* of a horizontal Motion, by the lighted Gunpowder, and of a perpendicular Motion by its own Weight. Hence Hunters (excluding the Difference which can be occasioned either by the Quality of the Gunpowder, or the Caliber of the Gun) must aim a little higher, when they want to hit their Prey, at some Distance; for the leaden Bullet exploded from the Gun describes a Curve, and almost parabolick Line, not a right one; as I'll explain it in a clearer Manner, when I'll treat of the Descent of heavy Bodies, &c.

The REFLECTION of Motion in a mobile Body, is the Regress of the mobile Body from another Body it cannot penetrate. As when a Ball be thrown against a Wall, as it cannot penetrate the Wall, and is endued with an elastick Faculty, immediately returns back.

But when a Body is thrown against another, it falls against it, either perpendicularly and directly, or obliquely; if it falls perpendicularly, and is capable of Reflection, it must measure quite the same Line, since there is no Reason why it should incline to one Part rather than another, *v. gr.* when a Bladder blown is thrown against the Pavement, it is observed to return back according to the same perpendicular Line.

But if that Body falls obliquely against another, *viz.* if a Ball be thrown according to the Line A B, fig. 19. against the Line C B, in such a Manner as to form with it the Angle A B C, less than a right one, then it will reflect on the other Part, and keep the same Inclination towards the Superficy B E, or from another Angle equal to the former: The former is an *Angle of Incidence*, and the latter an *Angle of Reflection*; and those Angles, if the Contact be made on a smooth and polished Superficy, and meet with no Obstruction, must be equal, as is shewn in the second Dissertation of Des Cartes's Dioptricks, in this Manner.

Let it be the Ball A, fig. 20. which is carried through the Line A B, into the Point B; its Motion is understood to be composed of two others, *viz.* of a Perpendicular, whereby it arrives at the Line C B E, and of a Horizontal, whereby it arrives at the Line G B H, or tends towards D E F: Whence it may be imagined, that the Ball is impelled by a double Power at once, *viz.* by one Power, according to the perpendicular Line A C; and by another, according to the horizontal Line A R D. If those Faculties or Powers be supposed equal, the Line A C will be equal to the Line A R, or C B; because the

Ball advances as much by an horizontal Motion, as it is thrown by a perpendicular one; and therefore the Line A B will be the Diagonal of the perfect Square A C B R, but if the Faculties be supposed unequal, or if the Motion is said to be made according to a more oblique Line, another Proportion will be observed between the Faculties or Powers, and those Lines perpendicular and horizontal, and such as the Power will be to the Power, such will be the Line to the other Line.

For when the Ball will have touched the Point B in the Superficy or Line C B E, which opposes the perpendicular Motion, not the horizontal, it will change its perpendicular Motion, not the horizontal: But though the Determination be changed, the Motion does not immediately cease, for the Ball returns with almost the same Force it was thrown with: Hence it follows, that when it advances forward horizontally according to the Length E D equal to itself C B, it will advance forward by a perpendicular Motion according to the Length E D equal to A C; so as for the Angle of Reflection D B E, to be equal to the Angle of Incidence A B C.

The same happens if C B E, fig. 21. be imagined to be a small Cord, extended from the Point L to the Point M, against which is thrown the Ball A, according to the Line A B, for then the Cord will be bowed according to the perpendicular Line B i K, to the Point i, or thereabouts, and not according to the oblique Line B n f to the Point n; because the Motion or Inflection is easier and shorter, according to the perpendicular Line, than according to the oblique: Therefore that Cord by its Elasticity will reflect the Ball in G; but when otherwise, the Ball with the same Force tends by a horizontal Motion towards the Point E, it must come back through the diagonal Line B D, which is the middle Line between both; and thus will form an Angle of Reflection equal to the Angle of Incidence.

If the Angle of Incidence had been more acute, *viz.* if the Ball had been thrown from the Point P to the Point B, the Angle of Reflection had been very near semblable to it, and the Ball re-percuted into the Point O. This can be seen in those small smooth Stones which Children throw obliquely into a River, for those Stones reflect in the Superficy of the Water, with almost the same Inclination or Obliquity. Several say, that they have experienced the same Thing in playing Pieces of Brass Cannon on the Shoar, and that several have been killed on the opposite Shoar, by the Bullets having reflected in the Superficy of the Water: Which is a Proof that the Angle of Reflection of the Bullets was very near equal to the Angle of Incidence.

Therefore the perfect Equality of the Angles of Incidence and of Reflection, can only be defended, if the Reflection be made in a Superficy so smooth and so well polished, that the Asperity or Situation of the Parts be not an Obstacle to that Equality; nor the Motion of the mobile Body be diminished in the Contact or Percussion: For if the Superficy be scabrous and unequable, or in any Manner distorted, it will interrupt the Motion, according to the various Situation and Asperity of its Parts. Likewise the same mobile Body can by its Figure, or Texture, or the Loss of its Motion, hinder the Angle of Incidence, and the Angle of Reflection, from being entirely equal between themselves. For if it loses the least Part of its perpendicular Motion, as it happens in the small Pebbles which Children throw obliquely on the Superficy of a River, the Angle of Reflection must certainly be less than that of Incidence; because as much of their perpendicular Motion those Pebbles communicate to the Water they touch, so much they lose of it in the Reflection.

As to the REFRACTION of Motion—As often as a mobile Body passes from a liquid one, into another Liquid of a different Kind, which it penetrates and divides, it is not reflected by it, but it sometimes suffers another Mutation, called *Refraction*; with regard to which the modern Mathematicians have made several curious Observations, relating particularly to Astronomy and Dioptrick; but which the ancient Philosophers have not so much as taken the least Notice of.

REFRACTION, is the Inflection of Motion, whereby a mobile Body, according to the greater or lesser Resistance of the Liquid, which it enters obliquely, declines from its right Line.

Line. Therefore a mobile Body falling perpendicularly on a Liquid of a different Kind, suffers no *Refraction*, viz. if the Ball A, fig. 22. falls perpendicularly from the Air into Water, and begins to penetrate it in the Point E, it will descend, by a right Way, into B; since no Reason occurs why it should incline more on one Part than on the other. But if a mobile Body, viz. a Ball, enters the Water in an oblique Manner, then it will recede from the right Way; in which Revers, Gravity and Levity can produce some Variation.

But as the Doctrine of *Refraction* regards, particularly, Light, which we'll prove afterwards to be placed in a small Body pressed and moved, it seems more proper to explain it in the Rays of the Light, in which there is properly neither Gravity nor Levity.

Let therefore the Ray of Light be *ab*, fig. 23. which passes obliquely from the Air into Water, as it must on his Way tend towards *c*, it will be refracted in *b*, in approaching the Perpendicular *ef*.

If it had come from *d*, and passed from the Water into the Air, as soon as it had arrived at *b*, it had not proceeded forwards to *g*, but receding from the perpendicular Line *ef*, it had inclined towards the Point *a*.

Which to understand, you must conceive the solid Ray *kkil*, which falls obliquely into the Water, where its Point *i* shall reach the Superficy of the Water, while the Point *b* will be still in the Air: And as the Resistance of the Water is greater than that of the Air, while the Point *i* shall run through the Space *im*, the Point *l* shall run through the Space *ln*, which is much greater than the Space *im*, as the Resistance of the Water is much greater than that of the Air: The one and the other Motion *ln* and *im*, is understood to be made circular, and round the Center *r*, in which the Line *li* and *am* are formed.

But when the Line *il* will be arrived at *mn*, and the whole Ray shall touch the Water with its anterior Parts, it will find the same Resistance every where; and thus will advance towards the Part *odp*, by a right Motion, and not a circular one.

On the contrary, if the Radius *opmn* was to come out of the Water, its Point *n* would reach the Air sooner than the Point *m*; therefore while the Point *n*, by a circular Motion were moved into *l*, the Point *m* should likewise be moved into *i*; and then both by the Force of the Water, and a direct Way should tend towards K L, in receding from the perpendicular.

From this I'll pass to the true and proper Cause of *Motion*, either *effetrice* or *conservatrice*.

We call, 1. In Metaphysics, the true and proper *effetrice Cause* of *Motion*, that which truly and properly produces *Motion* in Bodies, or which imprints a Motion in them, or in a Word moves them.—2. To move the Bodies, is to carry them from one Place into another, by a continual Fluctuation.

The Bodies which are carried from one Place into another want God's continual Preservation; whence for Bodies to be moved, it is necessary they should be preserved in different Places, or continually created in those Places: But they cannot be continually created in those Places, but by him who has first created them; since a continual Creation be but as an Extension of the first Creation: Therefore without him by whom they have been created, they cannot be moved.

Bodies besides can be clearly and distinctly conceived without any Motion, even without any Penchant to Motion, and without any Faculty or Power, or active and inward Principle to move themselves: For, v. gr. an immoveable Stone, and destitute of all Penchant to Motion, cannot be understood to lose the Nature of a Body: Therefore *Motion*, or a Penchant to Motion is not identical to a Body.

COROLLARY.

The *Motion* of Bodies does not properly proceed from themselves, since they can neither carry themselves nor other Bodies from one Place into another; the Faculty of moving themselves, or communicating a *Motion* to other Bodies is not contained in their Nature, and they are clearly and distinctly conceived without a Faculty or active Principle of Motion.

The Occasion of the Motion of the large and sensi-

ble Bodies draws its Beginning from a subtile and fluid Matter, which the Author of Nature keeps in a perpetual Motion; which can be demonstrated by Induction: For, v. gr. in a Watch, the Motion of the Index, which shews the Hours, proceeds from the Wheels, which Wheels are put in Motion by the Spring inclosed in the Barrel; which Spring does not move itself, but receives its Motion from the subtile Matter; which Matter receives its Motion from the first Mover of all Things.

A Body can be the occasional Cause of another Body; as when the subtile Matter runs against the large Bodies, or Somebody pushes a Ball against another Ball: Thus Incurion, or Impulsion, is the Occasion of the Author of Nature transferring those Bodies into another Place, according to the Law he has prescribed to himself.

The natural Bodies can be very well called the second Nature; and nearest Causes of *Motions*, or natural Effects; because those Causes are employed by the Author of Nature to produce those Effects: v. gr. the Sun to produce Light and Heat.

The first and second Cause of a continued Motion in a Body, is the same with the Cause of the first Motion.

COROLLARY I.

A *Motion* once imprinted into a Body, continues always in it, till it be stopt by an outward Cause, viz. by the Bodies it meets in its Way; because it cannot be changed or destroyed by that Body into which it is received; since all Body be idle by itself. Whence if it was moved in the Vacuum, or rather in a Space in which there were no Resistance, its Motion would be perpetual.

COROLLARY II.

There is no definite Term, towards which the Motion tends, unless what proceeds from the Bodies it meet in its Way; for without those Bodies the Motion would be perpetual, and never interrupted, as we have already observed, and is plainly seen in the Planets, the Revolution whereof is perpetual.

The next Thing which falls under our Consideration is, the Cause of the reflected Motion; wherein I'll treat of the Elasticity of the Bodies.

There is such an Affinity between physical Questions, that one can scarce be explained or understood without several others. Thus the Cause of the reflected Motion, requires a Knowledge of Elasticity; and Elasticity, an Explication of Hardness. But as all those Things cannot be treated together, I'll postpone the Explication of Hardness; and speak only, in this Place, of the Cause of a reflected Motion, and of the Elasticity of Bodies.

ELASTICITY, or the *elastick Faculty* of Bodies, is the Power of restoring itself to its former State; as when the Branch of a Tree which was bowed returns to its former State of Extension. Therefore a Body for to be called *elastick*, must be first pressed or bowed, retaining all the while the Power to re-assume its former State.

If there was therefore a Body entirely hard and inflexible, such as the Atoms of the *Epicureans* are imagined to be, it would appear quite destitute of all *elastick Faculty*, since it could neither be bowed nor pressed.

Likewise if there was a Body perfectly liquid, capable of taking easily all Sorts of Form, and of retaining none, such as the Matter of the first Element of *Descartes* is represented to be, it would have no Elasticity, since it could neither be pressed nor bowed, so as to be capable to re-assume its former State. First it could not be pressed beyond Nature, since by its Nature it retains no Form. Secondly, being pressed it could not re-assume its former State, since it is capable of all Figures, and retains naturally the last which has been given to it.

COROLLARY.

An *elastick Body* must have at least some Rigidity or Hardness in its Parts, whereby to support as much as possible its Form, otherwise it would never endeavour to recover its former State.

Which notwithstanding the sole Rigidity of the Parts ought not to be considered as the proper Cause of Elasticity, since Rigidity is in some measure the same with the *elastick Faculty*, or at least proceeds from the same Principle: Which, when we consider with a great deal

of Attention, the Nature of Bodies, it seems to be nothing else but a certain subtile Matter, which runs through the Meatus of the larger Bodies; which Sentiment, which is that of *Des Cartes*, can be confirmed by several Examples.

For, 1. When an Ivory Ball falls on the Pavement, the Parts where the Contact is made, are plained, and consequently the Passages of the subtile Matter, closed. But the subtile Matter, to flow more freely, endeavours to dilate those Passages or Meatus, by penetrating them: Which it is impossible it should accomplish, without either removing the Pavement, or lifting up the Ball. But it is more easy to lift up the Ball, than to remove the Pavement; therefore it lifts up the Ball, and restores it to its former State. Let, *v. gr.* the Ball be *a d b*, fig. 25. in which the Part *a* be compressed in such a Manner, as for the Motion of the subtile Matter from the Part *c* thro' the Part *b* to *d* and *e* to be retarded: Then certainly that Matter by the continual Impulsion whereby it endeavours to dilate the Pores of the Ball, will restore to the Ball its former Form. But as the Ball received by the Batler, not only becomes more Plane in those Parts which touch the Batler, but even bends the Net of the Batler, by the Elasticity thereof it is repercutted; likewise an Ivory Ball falling on a Marble-Table, is reflected, as well by its own Elasticity, as by that of the Table.

Secondly, The same Thing may be observed in the Spring inclosed in the Barrel of a Watch; for if the Spring be inflected, the Pores in the convex Superficy, are dilated, and closed in the Concave. Whence the coarser Particles of the subtile Matter, can enter the convex Superficy, but cannot penetrate the Concave: And therefore endeavour to restore by their Penchant, and Pression, the Body to its former State. Here it happens, that the subtile Matter which flows continually, lengthwise, from one Extreme of the Spring to the other, affects as much as possible a right Line, and consequently endeavours to extend the Spring.

Next follow our Reflections on the Cause of a translated Motion, where I'll treat of the Laws of Motions, observed in the Collision of Bodies.

As God is the Author of all Motions, he has, notwithstanding, established Causes, which are the Occasion of his creating various Motions; which Causes are commonly called *second* or *natural*, and by modern Philosophers, *occasional*; and although those Causes, can sometimes be spiritual, *viz.* the Act of the Will with Regard to the Motion of the Members in a human Body; I'll speak in this Place but of the sole Bodies, *viz.* as by their running against other Bodies, they commonly excite them to Motion. Whence though Bodies consider'd in themselves, are only accounted passive, not active; if notwithstanding they be consider'd with Respect to the Bodies they touch or impel, they are said to act on them.

They exert their Strength, not only upon the Bodies which are nearest and contiguous to them, but operate, likewise, by the Intervention of the contiguous on those which are distant from them, *viz.* the Sun, by the interjected Rays of the subtile Matter, warms us: Though this Faculty of acting does not extend to all Kind of Distance, without Exception, but only to a certain determinate one, *v. gr.* the Fire-Heat extends no farther than a certain determinate Distance, which is greater or smaller, according to the Violence of the Fire: And that Circle whereby the Action of Bodies is terminated on all Sides, is called their *Sphere of Activity*.

But with what Proportion one Body operates on another, and communicates to it its Motion, and which are the Laws established by the Author of Nature, in the Collision of Bodies, is what can be discover'd only by observing carefully their natural Effects, and a long Meditation.

Des Cartes, who first of all attempted that Discovery, says, *second. part. princip. num. 36.* and following, that God is the first Cause, as well of the Matter as of the Motion, and that he has produced a certain Quantity of Matter and of Motion, which always continues the same, without Increase or Diminution; for though some Part of the Matter, has at one Time a greater, and at another a lesser Quantity of Motion; there remains always, notwithstanding, the same Measure of Motion in the whole

corporeal Nature; and when one Part thereof receives some Increase, as much Diminution is made in another. To which Sentiments of *Des Cartes* I subscribe, as the most proper to explain the Nature of Things.

From this Foundation he deduces three Laws, which, in his Sentiment, are always to be observed and never violated.

The first consists in this, that all Bodies remain in that State in which it was once placed, till that State be changed by the Encounter of other Bodies. Thus we see a Matter, which is square, retaining always the same Figure, till something happens from another Part, which makes it change that Figure. For the same Reason, when the Matter is at rest, it can be excited to Motion by another Cause, but not of itself: That when it is moved, it continues in Motion as long as it meets with nothing to stop its Motion.

The second Law of Nature is, that every Part of Matter which is moved, affects always a right Line, though by the Encounter of other Bodies, it often steps out of the right Road, and acquires a circular Motion, as it happens in a River, the Water whereof running against the Pile of a Bridge, returns back, and acquires a circular Motion, when it should have followed the strait Way, if it had met with no Obstruction to change its Determination.

For this Law, which *Des Cartes* believes is founded on God's Immutability, as well as the first, we can account physically in the following Manner.

A Body which is moved, affects that Line to which it is necessarily determined as the most compendious; and that Line is the right; as it appears in a Ball, which as it begins to be moved on a Plane, can be understood to be moved from one Point of the Space to the nearest and contiguous Point; which Points cannot be otherwise disposed but in a right Line: Since two Points or Spaces, which are considered as indivisible, never form a curve Line: Therefore the Beginning of the Motion of a Body is always determined into a right Line. And consequently a Body which is moved, affects always a right Line; unless a circular Motion be communicated to it, by the Encounter of other Bodies.

Hence it is that the Stone *a*, fig. 26. turn'd round in a Sling, by letting slip one of the Chords of the Sling, is thrown according to the right Line *a g*, which right Line is the *Tangent* of the Circle, delineated by the Sling, *i. e.* it touches it in the Point *a*.

Likewise, if Corn, or another minute Bodies, be put on a Mill-Stone, turning round, and are carried by the Motion of the Mill-Stone, they'll come out of it according to the Tangent-Lines. Whence it may be infer'd, that all that's moved, even of a circular Motion, affects always a right Line, and recedes as much as possible from the Center of Motion; which is of a great Use in Physick.

The third Law of Nature of *Des Cartes*, contains two Parts.

His former Part is thus: As often as a Body which is in Motion, meets with another, if it has a lesser Force to go forward according to a right Line, than the other has to hinder it; then it reflects on the opposite Part; and retaining its Motion, changes only the Determination of Motion.

This first Part can be true in elastick Bodies; *v. gr.* in an Ivory Ball thrown on a Marble-Table. But in hard and inflexible Bodies, such as are imagined by *Des Cartes*, it can have no Place.

Then *Des Cartes* has establish'd Rest, as a certain Force and Power in a Body at Rest, whereby that Body resists to the Motion of another; which I have already refuted.

The latter Part of the Law is thus: If a Body in Motion, falls on a weaker Body, all the Motion it communicates to it, it loses it. So that if a hard Body encounters against a soft Body, it transfers all its Motion to it, *v. gr.* if a Ball be thrown into a Heap of Dust, the whole Impetuosity of the Ball passes into the Heap of Dust, or into the ambient Air, and is thereby entirely stopp'd. I do not see that this latter Part contains any Thing contrary to Reason.

But God has join'd each Part of this Universe between themselves, so as to communicate their Motions to each

each other by a mutual Collision. Therefore Laws of that Communication were to be established, according to which a Body encountering against another, should acquire nothing, or lose nothing of its Motion: Which to accomplish, *Des Cartes* has imagin'd hard and entirely inflexible Bodies, such as are not to be found in Nature; removing in his Mind, as well the sensible Qualities, as Flexibility, Softness, &c. as the Impediments of other Bodies, whereby the Laws of Nature could be disturbed. By that Means he imagin'd, that he could deduce, with a greater Facility, the Laws of Motions, from the Principles he had established.

The Percussion of two Bodies can be made in two Manners: For either both run mutually against one another from opposite Parts; or one runs against another, which is at Rest: Or both are carried towards the same Part, so that the Body which is last, is moved with a greater Celerity, and overtakes that which is foremost.

If they run against one another from opposite Parts: They are either equal in Bulk and Velocity, or are equal in Velocity, and unequal in Bulk or Weight; or lastly, are equal in Weight, and unequal in Velocity.

If one of them runs against another which is at Rest, or that which is less runs against a bigger, or a big one falls on a lesser; or an equal runs against another equal. These three Rules are explain'd by the fourth, fifth, and sixth Rule of *Des Cartes*.

If both are moved towards the same Part; or an equal Body overtakes another equal Body; or a lesser Body overtakes a bigger; or lastly, a greater overtakes a less. Whence three Rules can likewise be established, relating to this third Manner of Percussion: But *Des Cartes* has established but one Rule for it, viz. the seventh. For he has proposed seven Rules of the Communication of Motions, in the second Part of the Principles, Num. 46. and following.

The first is thus: *If two equal Bodies, as A and B, fig. 27. directed from opposite Parts with an equal Celerity, encounter one another, after the Collision, they will reflect with an equal Celerity towards the Place whence they departed.* For there is no Cause why the Motion should perish, but the Determinations must be changed.

The first Rule is observed in elastick Bodies; for in those which have no Elasticity; whether they be inflexible, as imagined by *Des Cartes*; or soft, it has no Place; because the opposite Determinations in Bodies destitute of Elasticity, destroy mutually one another; and those Bodies are only stopped by one another, but do not reflect.

But to apply these, and the following Rules to Experiments; and to imprint a certain Quantity of Motion into a Body, comparatively to another; we commonly take two Points in a Wall, perpendicularly erected, viz. *a* and *b*, fig. 28. to which we affix two Nails, from which hung two Threads *ag* and *bb*, whereby are described the two Arches of a Circle *hlf* and *gic*, equal between themselves, and distributed into equal Divisions. For then if the two equal Balls *g* and *h*, suspended by those two Threads, be both thrown down from the same Height, they will run from opposite Parts against one another in the Point *m*, with an equal Velocity of Motion.

Therefore if they be both Elasticks, viz. either Marble, or Ivory, &c. then after the Collision, they'll reflect with the same Celerity to almost the same Height from whence they were thrown. For if an elastick Ball hits another elastick Ball with the same Force it was hit with by that other elastick Ball; and if there was not a little Obstacle as well from the Gravity of the Ball, as from the Resistance of the Air, they would mutually repel one another to the same Place from which they were thrown.

But if the Balls be destitute of Elasticity, viz. if they be made of soft Clay, both, after the Collision, will remain immoveable in the Point *m*. Though it must not be inferred hence, that their Motion is entirely perished; for it is transferred either into the Parts of the Balls, which being soft, are compressed, or swell in the Form of a Belly, or into the incumbent Air, and subtle Matter.

The second Rule. — *If the Bodies be unequal, and pushed against one another with an equal Velocity; the lesser Body shall reflect with the same Celerity, and both*

advance together towards the same Part. This Rule seems to me contrary to Experience, even in Bodies destitute of Elasticity, from which *Des Cartes* has established it. For if the two Bodies, *g* and *h*, be soft, so that *g* be twice as big as *h*, and both thrown from the same Height (viz. from *i* and *b*, fig. 28) the Body *h* will fly back, but not with the same Celerity it came down, for the Motion of the lesser Body will take from the Motion of the bigger one, a Part equal to itself, and both move towards the Part *f*, with that Quantity of Motion whereby the Body *h* was surpassed by the Body *g*, before their Encounter.

But if those Bodies destitute of Elasticity, whether they be inflexible or soft, are supposed to have Velocities reciprocal with the Bulk; so that v. g. the Body *g* be twice the Body *h*, but, *vicissim*, and moved twice slower, viz. if the Body *g* be thrown from the Point *i*, and the Body *h* from the Point *f*, which is twice farther, both after the Collision, will remain immoveable, as is plainly seen in two soft Balls, viz. made of Clay. But however, as the Quantity of Motion is deduced both from the Bulk and Velocity, a Body twice lesser than the other, but moved twice swifter, has the same Motion as the other: Hence it happens, that both rest in the Point *m*, as if they were equal, and fallen with an equal Velocity.

What I have said, that a less Body thrown down from a Point twice more remote, has twice the Velocity of a greater, I will not have it understood agreeable to a very accurate Reason; since the Velocities of heavy Bodies do not increase as Spaces do.

If those unequal Bodies, pushed, notwithstanding against one another with an equal Velocity, be indued with Elasticity, both their Bulk is to be considered as in Bodies destitute of Elasticity. Then we must examine what that elastick Power produces in both, according to the Doctrine above deliver'd: Hence we'll discover what must happen in every Case.

The third Rule. — *If Bodies be equal in Bulk, but are moved with an unequal Velocity, that only which is moved slower, will return back after the Encounter, and both will be moved with an equal Celerity towards the same Part,* v. gr. If the Body *g* approaches with six Degrees of Celerity; and the Body *h* with four only, fig. 29. the sole Body *h* will return back after the Collision, and the Body *g*, besides, will communicate to it one of its Degrees of Velocity, that both afterwards may separately, with each five Degrees of Celerity, tend towards the same Part.

But this Rule is false, in that it can be adapted only to Bodies destitute of Elasticity; and because a lesser Quantity of Motion remains in them after the Collision, than it establishes; for if the two soft Bodies *g* and *h*, be supposed equal in Bulk; and the Body *g* runs with six Degrees of Velocity against the Body *h* at rest, it will communicate to it three Degrees of its Velocity, that both may be carried with the same Velocity towards the same Part. But if *h* runs against *g* with four Degrees of Velocity, as supposed in *Des Cartes*'s Hypothesis; then it will borrow four Degrees of Velocity from *g*; and both, after the Collision, be moved towards the same Part; so that the two Degrees of Velocity remaining in the Body *g*, will be equally distributed in them.

But if those equal Bodies are said to be elastick, and the Body *g* be thrown from the Height *c*; and *h* from the Height *l* only, so as the Velocity will be greater in the Body *g* than in the Body *h*, both after the Percussion will permute their Velocities, and the Body *g* reflect only into the Point *i*, and the Body *h* into the Point *f*. The Reason whereof is, that the Body *g* which is moved with more Celerity, strikes stronger the Body *h* in the Collision, than is stricken by it; hence they must change their Velocities between them.

The fourth Rule. — *If a Body be less than another which is at Rest, with whatever Celerity it may be pushed against it, it will never communicate a Motion to it, but will be reflected by it, into a contrary Part,* v. gr. never the Body *CC* at Rest, can be moved either by the Body *A* or the Body *B*, fig. 30. because a Body at Rest resists more to a greater Celerity, than to a lesser, and the greater the Celerity is in a lesser Body, the more the Resistance increases in a greater.

But that Rule, which establishes Rest in a Body, as something real and positive, to resist the Motion of another Body,

Body; can be demonstrated contrary, both to Reason and to Experience.

And first it is contrary to Experience: For if some softer Body, *v. gr.* if the Body *b* runs with three Degrees of Velocity against the Body *g*, twice bigger and at Rest; it will communicate to it two Degrees of its Velocity, and both united, will run with one Degree of Celerity against a Body three Times bigger than the Body *b*.

If those Bodies be elastick, and the lesser Body *b* moved, is said to run against the greater *g* and at Rest, the lesser Body *b* will not (according to *Des Cartes*) return with all its Motion, but will communicate something of it to the greater Body *g*, having Regard to the Motion of both, and to the elastick Faculty.

This Rule of *Des Cartes* is also contrary to Reason; for that a lesser Body may be capable to give Motion to a greater, it suffices that the Rest of the greater be not infinite, and the Motion of the lesser can be increased *in infinitum*: For hence it will happen at last, that the Rest of the greater will be conquered by the Motion of the lesser: But the Rest of the greater Body is not infinite, since it is only attributed to the Bulk, which is finite; but the Motion of the lesser Body can be increased *in infinitum*, since it takes its Quantity, not from the sole Bulk, which is finite; but likewise from Velocity, which can be increased *in infinitum*.

Therefore a less Body can give Motion to a greater, and the fourth Rule of *Des Cartes* is not only contrary to Experience, but likewise to Reason.

The fifth Rule. *If the bigger Body CC hits the lesser Body A or B, which is at Rest, fig. 31. it transfers to it as much of its Motion as is sufficient to have them both moved with an equal Velocity.* Let it be, for Example, the Body CC, which being double the Body A, and having three Degrees of Velocity, will give one of them to it: For the Body A will be equally moved with one Degree, as the Body CC with two.

This Rule is agreeable to Experience, since those Bodies, after Collision, are united into one; but is not observed in elastick Bodies: For when a greater Body is pushed against another Body lesser, and at Rest, though the greater begins to move towards the same Part, it notwithstanding communicates a greater Celerity than that it has, though it does not give it a greater Quantity of Motion.

The sixth Rule. *If the Bodies A and B be equal, and the Body B be at Rest, the Body A hitting with four Degrees of Celerity against the Body B, will communicate to it one of its Degrees of Celerity, and with the three Degrees of Celerity remaining, will reflect into a contrary Part.*

This Rule, even according to *Des Cartes*'s Doctrine, is entirely false: For the Body A must give half its Motion to the Body B equal to it and at Rest, that together they may advance towards the same Parts, provided they be soft, and destitute of Elasticity; because then they make but one Body.

But if they be Elasticks the Body A will stop, and transfer its whole Motion to the Body B which was at Rest before. For as the Body A has two contrary Determinations, one whereby it is carried into the Body B, the other whereby it is repelled by its Elasticity, those two Determinations will mutually destroy one another, and consequently the Body A be necessarily stopped: But as the Body B has only one Determination, which it receives from the Body A, it therefore will be moved with that Quantity of Motion which was in the Body A.

Therefore if the Body A be pushed against the several Bodies C D E F, for Example, if a Crown be thrown upon other Crowns equal to it, all those Bodies will stop except the last; for if the Body A, in the Collision has two contrary Determinations, the Body B will have two likewise as well as D and E; so that the Body *f* which is repelled by none, must be moved.

For the same Reason, if two Bodies be thrown against several others, they will all stop except the two last. If three were thrown, only the three last would be moved.

The seventh and last Rule is a little longer and more intricate, and not true: The Sense of it is very near as follows. — *If B and CC, fig 32. be moved towards the same Part, and CC which is double the other, goes foremost, but slower than B, so as to be at last overtaken by it, it can*

happen that B either will transfer Part of its Velocity to CC, or fly back with all its Motion.

For if the Excess of Celerity whereby B surpasses CC, be greater than the Excess of Magnitude, whereby CC surpasses B; then B will communicate to CC some of its Motion; that both may be moved with an equal Celerity towards the same Part: But if the Excess of Celerity whereby B surpasses CC be less than the Excess of Magnitude whereby CC surpasses B, nothing of the Motion of the Body B will be transferred to CC; but the Body B will fly back with all its Motion.

This Rule can be defended neither by Experience, nor by Reason: Whence we must philosophise in another Manner, of the Reason of that Percussion, and distinguish three Cases.

For if the Bodies in which the Experiment is made be destitute of Elasticity, *viz.* *g* and *b*, fig 33. and are moved towards the same Part slowly at first, and afterwards with great Celerity; either both are equal, or that which precedes, *viz.* *b* is greater, or lastly, that which follows, *viz.* *g* is greater.

If they be equal, and the Body *g* is thrown down from the Point *c*, and the Body *b* from the Point *i*; so that there be four Degrees of Velocity in the Body *g*, and only two in the Body *b*: After *g* shall have overtaken *b*, it will communicate to it one of the Degrees of its Celerity, that both together should proceed forward with three Degrees of Velocity; which Celerity is half the Celerity of both Bodies taken together: For 4 and 2 Degrees is 6, and half that Sum is 3.

Whence it may be inferred, that if the Body *g* be greater than *b*, all other Things supposed as before he is not to communicate a whole Degree of its Celerity to *b*; but if it be lesser, he must communicate to it more than one Degree of its Celerity, because it is distributed according to the Bulk. Therefore if when the Bodies are equal, and the common Velocity after the Encounter be half the same composed of the former Velocities; certainly when the Body which is foremost will be lesser than the other, the common Velocity will be greater than half the Sum; and when that Body will be greater, the common Celerity is to be lesser than half the Sum.

But if the Bodies *g* and *b* be elastick and equal, after *g* will have overtaken *b*, they'll interchange their Velocities: For if the Body *g* was to run, with four Degrees of Velocity against the Body *b* at Rest, it would hit it with all those four Degrees, and be repulsed by so many Degrees afterwards by the Elasticity; and thus stop, having transferred its whole Motion to the Body *b*. Therefore if the Body *b* flies with two Degrees when hit by the Body *g*, the Percussion then will be of two Degrees only: Whence two Degrees will be added to the Body *b*, and two taken from the Body *g*; and thus they will interchange their Velocities.

If those two elastick Bodies be unequal, and are guided toward the same Parts by unequal Motions, Regard will be had as well to the Bulk of both Bodies, as to the Elasticity. But there is a more curious Research of those Things, for him who will take the Trouble to make a whole Treatise of Percussion; which, though attended with great Difficulties, is of little or no Use; therefore I'll pass to something which is much more useful, *viz.* to the Motion of heavy and light Bodies, where I'll treat of Levity and Gravity.

Nothing is more common in the peripatetick Schools, than to affirm, that Gravity is a certain Faculty or Power, or a natural Cause, whereby a heavy Body is thrown downwards; and Levity a Quality or Cause whereby it tends upwards. And to demonstrate to us, that there is within us a Science or certain Knowledge of Things by their Causes, they commonly make use of these Examples, *viz.* that a Stone is carried downwards, because it is heavy, and the Flame upwards, because it is light: Notwithstanding which there is not perhaps throughout Physick a more difficult Question than is that of the Gravity and Levity of Bodies.

The Opinion, that there is a natural Gravity in Bodies is not a modern one: For *Epicurus* pretended, that all the Atoms being solid, heavy and ponderous, were carried by a natural Propensity, and through a perpendicular Line, downwards: Therefore there is in his Opinion, a double Motion of the Atoms, one natural whereby

whereby they are carried downwards; and the other violent, proceeding from the sole Impulsion and Compression of the others, whereby they are carried upwards. There can be added a Third, which is called of Inclination, *viz.* to avoid the Necessity of Fate, and to explain Man's Liberty; which Motion of Inclination can be also called natural. The violent Motion of the Atoms *Lucretius* illustrates by the Example of a Beam, which though very heavy, cannot without a great Violence, be kept under Water, but on the contrary is continually forced upwards by the same Waters. He speaks thus, *lib. 2. de rerum natur. vers. 169.*

*Nonne vides etiam quantâ vi tigna trabesque
Respuat humor aquæ? nam quam magni merismus altè
Directa, & magna vi multi pressimus ægrè,
Tam cupidè sursum revomit magis, atque remittit.
Plus at parte foras emergant, exilientque.
Nec tamen, hoc, quantum est in se, dubitamus opinor,
Quin vacuum perienne deorsum cuncta ferantur.*

But as nothing is upwards or downwards, but comparatively; and the Things we imagine to be placed upwards, are taught, by our Antipodes, to be placed downwards; and as all Body, with regard to itself, is very indifferent to Motion or Rest; neither Reason, nor Experience, can persuade that there is in Bodies that inward Principle, whether it be called *Nature* by the *Epiciureans*, or *Form*, or *Appetite*, or *Quality*, by the common Scholiasts: For as Bodies are idle of themselves, and cannot be moved, unless they be moved by others, whether they be carried upwards, or downwards, they must necessarily be pushed by others.

The Cause and Reason of this Impulsion, will be easily understood, if we admit a certain liquid Body diffused round the terraqueous Globe, and which consists, in Part, of a coarse Air, and in Part of an ætherial and subtile Substance, agitated round, by a vertical Motion, from West to East: For it happens hence, that all and every Part of that fluid Body, incline to recede from the Center of the Vortex, which is the same as the Center of the Earth, and tend with all their Force towards the Superficy of that Vortex.

Therefore if that Vortex of the liquid Substance, be conceived divided into several Columns, or rather Pyramids; though all the Particles of which those Pyramids or Columns consist, be brought to the supreme Superficy of the Vortex, they cannot notwithstanding fall all together beyond the Vortex, because they are forced back by the neighbouring Vortices; for one of those Columns cannot slip from the same Vortex, rather than another, since they all recede from the Center with an equal Force.

But if some solid Body be placed within a Pyramid, *v. g.* a Stone, which has not that Faculty to recede from the Center, which proceeds from the Substance of the first and second Element, in which the Particles of solid Bodies swim; it is manifest that that Pyramid will become weaker than the neighbouring Pyramids, of that Part of Motion, which the solid Body wants, and consequently that the Particles of the Pyramids will occupy the upper Place, and precipitate the Stone towards the Center of the Vortex.

The Thing is illustrated by the Example of Sealing-wax reduced into Powder, and thrown into a Pan full of Water: For if the Water be agitated with a Stick or the Finger, the Particles of the Wax will presently be carried to the Sides of the Pan, *viz.* while they have a greater Penchant than the Water to recede from the Center of the Vortex. But as those Particles are less solid, and rough in their Superfices, they sooner lose their Motion than the Particles of the Water, which are more solid, fluid, and lubrick: Whence as the vortical Motion continues in the Water, the Parts thereof recede with great Force from the Center of the Vortex, they precipitate the Wax, which is destitute of that Motion, to the Center.

Note, 1. That the Gravity of Bodies is not a certain Entity, inherent in the Bodies, as the Scholasticks imagine, whereby they are moved downwards; since such an Entity is unconceivable, and has been imagined for no other Reason than that the true Cause of

the Descent of Bodies was not known.

2. That all Sorts of sensible Bodies whatever, whether they be placed in the terraqueous Globe or round it, are indued with some Gravity, whether greater or lesser; and none of them can be called absolutely light, but comparatively only, since they are all subject to the Pression of the subtile and fluid Substance.

3. Those of sensible Bodies are heavier, which are precipitated downwards with a greater Force; *viz.* whose Texture is more compact, and penetrated with a greater Difficulty by the subtile and fluid Substance. Whence as the Texture of the Oil is less compact than that of Water, the Oil is less heavy than Water, and swims over it; for as it has a greater Number of Pores than Water, more Particles of the subtile Matter pass through those Pores, and consequently compress it more than it does Water.

Likewise Wood is sometimes lighter than Water, and Water lighter than a Stone. For a Stone, as being of a more compact Texture, is pressed downward by the subtile Substance, with a greater Force than Water; and Water than Wood. Because the easier a Body is penetrated by that subtile and fluid Substance, the greater Number of Strokes it avoids from that same Matter. Therefore in a Glass-Tube, wherein are contained Petroleum, Spirit of Wine, Oil of Tartar, and Glass reduced into Powder, commonly called the four Elements; each of those Bodies search its own Place, as it is more or less forced downwards by the subtile Substance. The Glass in Power occupies the lower Place, which is supposed that of the *Earth*; then the Oil of Tartar, which represents the *Water*; to which succeeds the Spirit of Wine, which represents the *Air*; and at Top of all the Petroleum, representing *Fire*. Therefore, let those four Bodies be ever so well mixed, if notwithstanding they are altogether left to themselves, they are separated again; and each re-assume its own proper Place.

To this it may be objected, 1. That certain Motions have been given to Bodies by the Author of Nature, to carry them to the Place appointed for them, *viz.* the light upwards, and the heavy downwards; and that therefore, the Motion of the heavy and light Bodies, is rather to be attributed to an innate Gravity and Levity, as to Qualities inherent in Bodies, than to the Impulsion of the subtile and fluid Matter.

I answer, that a certain Motion seems to have been given by the Author of Nature, to the Bodies, to be carried to the Place of their Destination, having regard to the Connexion which is between the Parts of this Universe; but not without that Regard. For we do not infer, that Motions have been given to Bodies by the Author of Nature, to render them capable to reach the Place of their Destination, from that there is such a Disunion between the Parts of this Universe, that they press one another, and thus are forced towards the Place appointed to them. But it is not likely that Gravity and Levity are mere Qualities depending from the Union of other Bodies. For Bodies are idle of themselves, and do not affect one Part of this Universe more than the other.

It is objected, 2. That *Aristotle, lib. 8. Physic. c. 4.* teaches, that the Motion of the light and heavy Bodies, proceeds from a generating Cause; therefore it does not proceed from the Impulsion of the subtile Matter.

I answer, that it does not seem likely, that a Stone, *v. gr.* which falls from the Roof of a House, is pushed down by generating Causes, *viz.* by the Sun, which, according to the *Peripateticians*, is the universal effectual Cause of all sublunary Things, or some other Causes, often very remote and distant; though, in some Manner, it receives from them the Gravity taken from the Disposition of Parts, adapted to the Body being pushed downwards.

It is objected, 3. That it is more probable that heavy Bodies are carried downwards by the substantial Effluvia, which flow continually from the Earth, according to the Sentiment of *Gassendi, Sect. 1. Physic. lib. 5. s. 2.*

I answer, that this Sentiment of *Gassendi*, can be rejected for several Reasons, 1. For though those Effluvia should flow continually from the Earth, and be moved upwards, it would still remain to explain, by what Force

or Power they should draw with so much Impetuosity to the Earth, the largest Bodies? What could determine them to return to the Place whence they were departed? Is it their own Gravity? But the same Question would return, *viz.* Whence that Gravity could proceed? Is it their Penchant to the Earth? But why should they incline towards the Earth, since they are said to have but just flew from it upwards? 2. Why should not those Effluvia, draw downward a light Body, *viz.* a Feather, rather than a compact one, as Lead? 3. While those Effluvia would be carried upwards, they would either run into the solid Parts of the heavy Body, or through its Pores. If we say the first, far from bringing it downwards, they should rather lift it upwards. If the second, they would make no Impression upon it, but should run in a direct Line from one Pore through the other.

It is objected, 4. That if the Gravity of Bodies be taken from the sole vertical Motion of the liquid Substance, as that Motion is quicker under the middle Circle of the whole Vertex, which Circle is called the Equator; slower under the Polar Circles, and there is no Motion at all under the Poles; the Gravity should likewise be very great under the Equator; slower under the Polar Circles, and none under the Poles.

It would, besides, follow hence, that heavy Bodies should not tend towards the Center of the Earth, as the Center of Gravity; but towards a Center parallel to the Equator, under which all heavy Bodies will be contained, *v. gr.* the Fall of a Body placed under one of the Polar Circles, should be directed towards the Center of that Polar Circle, not towards the Center of the Earth. But it is not likely, that a Stone taken from the Earth, falls down with a greater Celerity under the Equator, than under the Polar Circles; and stand still under the Poles. But it is rather more probable that heavy Bodies placed round the Earth, are directed towards its Center, as the common Center of all heavy Bodies, than to the various Centers parallel to the Circles: That therefore it is still uncertain, whether the Gravity of Bodies is to be taken from the sole Rotation of the liquid Substance.

I answer, 1. That heavy Bodies must not fall with less Celerity under the Polar Circles, and even under the Poles, than under the Equator, if while the fluid Matter, is turn'd round the Axis by a vertical Motion, its whole Volume can't pass through the Parts the most remote from the Poles, *viz.* the Equator; but the greatest Part thereof is forced to return back on the right and left, towards the Poles. Hence it happens, that not only according to the Plane of the Equator, but likewise according to the Plane of the Meridian, it is turn'd upside down, and consequently recedes from the Center of the Earth; and forces down the heavy Bodies, not only under the Equator, but likewise under the Polar Circles, and under the Poles.

To give some Strength to the last Objection, the whole Volume of the subtle Matter of which our Vortex is composed, should flow through the Equator, and a new Matter enter through the Poles, to supply the Place of the first; which can't be done, since there is no empty Place in the neighbouring Vortices to receive it, but on the contrary all those Vortices oppose its flowing out.

Thus far of the Motion of heavy Bodies: At present I must say something of the *Acceleration of the heavy Bodies in the Descent.* For the Intelligence of those Things, which have been happily discovered by our modern Mathematicians, and have been published almost in our Times, as well for the publick Utility, as for the Increase of Learning: I say that,

Heavy Bodies accelerate their Motion in descending: And that Acceleration very near follows the Progress of the uneven Numbers, 1, 3, 5, 7, since they are continually spurred on by the incumbent subtle Matter; for as that subtle Matter is always carried upwards, there is no Reason or Cause why its Faculty or Efficacy to force the heavy Bodies downwards, should be diminish'd or destroyed.

That that Acceleration follows very near the Progress of the uneven Numbers, 1, 3, 5, 7, appears not only by the Experiments of *Galileo*, but likewise of other famous Mathematicians, who by those they have made, particularly at the Observatory at *Paris*, have found, that a

Body falling, runs within the second of an Hour, or the Pulsation of an Artery, one six Feet; in the second Instant, three; in the third, five; or rather, if within a second, it was fallen from the Height of twelve Feet; it fell within two Seconds the Height of forty-eight Feet; and therefore; had run the second Time, thirty-six Feet, *i. e.* three Times the Space it had run the first Time.

They have observed this in Pendulums. For the Ball being suspended at a Rod three Feet, eight Lines and a half long, it performs a single Vibration within the Time of a second. But if the Rod be four Times longer, *viz.* twelve Feet, two Inches, and ten Lines, it will perform a single Vibration in twice the Time, *viz.* in two Seconds. So that to the first Second are allowed three Feet, with eight Lines and a half; and to the last, three Times three Feet, or nine Feet, twenty five Lines and a half. If the Pendulum be nine Times longer, *viz.* twenty-seven Feet, six Inches, and four Lines and a half, it describes its Arch within three Seconds. For those Sums, *viz.* three Feet, with eight Lines and a half; nine Feet, with two Inches, and one Line and a half; fifteen Feet, with three Inches, and six Lines and a half, make up the Sum of twenty-seven Feet, six Inches, and four Lines and a half.

Therefore heavy Bodies follow very near, in their Descent, especially in the lesser Distances, the Progress of the uneven Numbers, 1, 3, 5, 7, &c.

I say *very near*, and in the *lesser Distances*, because that Progression is observed neither accurately, nor at all Distances without Distinction.

Note, That there is no other Cause of Acceleration of the Motion of heavy Bodies in the Descent, than *that* which first pushes it downwards, *viz.* the liquid Matter whereby it is continually depressed.

2. That the Spaces run through by a heavy Body in falling, are, in *Galileo's* Hypothesis, between them, as *Quarters of Times.* For if a heavy Body in the first Time, or Pulsation of an Artery, runs six Feet, in the second, nine, in the third, fifteen, &c. it will follow hence, that at the End of the second Time, it will have run twenty-four Feet, *viz.* six within the first Pulsation of an Artery, and nine within the second. And if those twenty-four Feet, are joined with twenty-eight, which it will run in the third Time; they will make up fifty-two Feet. And thus, at the End of the third Time, it will be found to have run nine Hexapedes; and four and nine are quadrate Numbers.

This is commonly expressed, fig. 30. in which the Triangle, A 11. represents the Space run through at the first Time; the three Triangles comprised within 11 and 22, the Space run through at the second Time; &c. For 1 and 2 are 4, which is a quadrate Number, produced from a binary Number, carried into itself. The Ratio of all other Angles is the same. Therefore the Spaces run through by a heavy Body in the Hypothesis of *Galileo*, which as the lesser Distances approaches nearer the Truth, are between them as *Quarters of Time.*

The same is seen in Pendulums; for a Pendulum of three Feet, eight Lines and a half, accomplishes its simple Vibration within the Space of a Second; as we have already observed; a Pendulum of twelve Feet, two Inches and ten Lines, within two Seconds; and a Pendulum of twenty-seven Feet, six Inches and four Lines and a half, within three Seconds.

For 3, 12, and 27, are between them as 1, 4, and 9; for every where the first Number is contained four Times in the second; and nine Times in the third; 4 and 9 besides are Quarters of Times, *viz.* of two and three Seconds. Therefore the Spaces run thro' by a heavy Body; according to *Galileo's* Hypothesis, are between them as *Quarters of Times.*

3. A heavy Body, pushed by a horizontal Motion, *v. gr.* a Leaden Bullet exploded from a Cannon, is carried by one Motion only; and describes but one Line: But it is moved by two motrice Faculties or Powers, *viz.* by a *horizontal Motion*, from the lighted Gun-Powder, and by a *perpendicular one*, from its innate Gravity, or rather the Pressure of the subtle Substance. Therefore of that double Motion, *viz.* horizontal and perpendicular, is formed a certain composite

posite Motion, whereby is described a curve Line: Which Line, such as it is, is made up in this Manner.

The horizontal Motion, the Resistance of the Air excluded, follows the natural Series of the Numbers, 1, 2, 3, 4; and the perpendicular Motion advances forwards, according to the uneven Numbers, 1, 3, 5, 7, as we have already observed. Therefore the Line described by that double Motion, the Resistance of the Air excluded, is a *Parabola*.

For a *PARABOLA*, is a Line in which the Quarters of the Ordinates are between them, as Parts of a Diameter intercepted by those Ordinates. But a Line described by a heavy Body, thrown by a horizontal Motion, is such a Line. For in fig. 31. if the horizontal Lines *1 g*, *3 b*, *5 i*, *7 k*. called ordinate, are between them as the Numbers, 1, 2, 3, 4; and the Parts *6 i*, *13*, *35*, *57*, follow the Progression of the uneven Numbers, hence it can be understood that a Quarter of the Line *3 b*, which is, *v. gr.* of two Inches, is to a Quarter of that Line *5 i*, which is of 3 Inches, as *a b 63* is to *65*. For the Quarter of the Line *3 b* of two Inches is 4, and the Quarter of the Line *5 i*, which is of three Inches, is 9: Likewise *63*, or *6, 1, 3*, is 4; for it contains *1+3*. Likewise *65*, or *6, 1, 3, 5*, is 9: For it contains *1+3+5*. and thus the Line *b g b i k*, which describes the Water flowing from the Fountain *a* through the Pipe *b*, is parabolick.

All projected Bodies, provided they be not thrown upwards by a perpendicular Motion (for then they re-measure the same Line) describe in their Ascent and Descent, an entire Parabola.

Let it be, *v. gr.* a Bullet exploded from the Cannon *p*, fig. 32. and sent according to the Line *p m*, as it should be carried into the Point *m*, it will be carried by its own Weight into the Point *a*, then into *g i l o*; and that Line *p a g i l o* is parabolick. For as the Bullet by its horizontal Motion, the Resistance of the Air supposed, follows the Series of the natural Numbers, 1, 2, 3, 4, the Lines *f g*, *b i*, *k l*, *n o*, will be as 1, 2, 3, 4; but as it follows in the Descent the Progress of the uneven Numbers 1, 3, 5, 7, the Parts of the Diameter *a f*, *g b*, *b k*, *k n*, will be as the same Numbers 1, 3, 5, 7: Therefore, as we have observed already, the Quarters of the Ordinates will be between themselves, as the Parts of the Diameter intercepted by those Ordinates; and consequently the Bullet will very near describe a Parabola. For heavy Bodies do not fall perhaps, exactly according to the Progress of the uneven Numbers; and the Air besides opposing the horizontal Motion, hinders those heavy Bodies from following the natural Series of the Numbers, by that horizontal Motion; but the Difference is not sensible in smaller Distances. It does not seem foreign to our Purpose to observe here, that Bodies thrown to an Angle of 55 Degrees describe a very great Parabola.

For if a Bullet be thrown upwards, and according to a perpendicular Line, so as to form with the horizontal Line a right Angle, or of 90 Degrees, it will fall through the same Line.

But if it follows a Line nearer to the horizontal,

and form with it a less acute Angle, it will fall sooner by its Weight.

Therefore to send it very far, and that it may describe a very great Parabola, a middle Line must be chosen between the horizontal and perpendicular, *viz.* which should form with the horizontal, a Semi-right Angle, or of 45 Degrees.

For that Reason, the more or less the Line, according to which the Projection is made, will be inclined to the Horizon, one will be capable to judge into what Place the Bullets exploded will fall. For if above and beyond the forty-fifth Degree of Elevation, be taken equi-distant Arches, *viz.* 40 and 50, the Bullet will always fall in the same Place of the Horizon. But the Parabola described by a Bullet exploded according to 50 Degrees of Elevation, will be higher; and that according to 40 Degrees of Elevation, lower: Though both will have the same Amplitude, *i. e.* the Bullet will arrive at the same Point of the Horizon.

If I be asked, which is the Cause of the Progress of the Motion of heavy Bodies, by uneven Numbers? I answer, that as that Progress is not observed with much Accuracy, it is very difficult to assign the Cause thereof. Though that assigned by *Galileo*, and his Disciples, shew a great Strength of Imagination. Let's suppose, say they, that a heavy Body descends so as to accomplish the first Time, or within a Second, an Hexaped: If when it began to be moved, it had had that Velocity it acquired after the first Time, it had run double the Space, *viz.* two Hexapedes. Therefore in the second Time, by the Force of that Impetus it has acquired, and which it retains, it will run two Hexapedes, and another, besides, by its own Gravity; so that it will run three Hexapedes. Likewise the third Time it will run, by the Force it has acquired, not two Hexapedes only, but four; to which if one be added, which it acquires by its own Gravity, you'll have five Hexapedes, which it will have to run in that Time. There is the same Ratio of Increase in all the subsequent Times; whereby they pretend that the Motion of heavy Bodies is to be accelerated according to the Progress of uneven Numbers.

These they commonly demonstrate, fig. 33. in which the Line *A B* is said to represent the Times, *viz.* *A 1, 12, 23, 3 B*: And the Lines *11, 22, 33, B C* represent the Velocities acquired to each Time. And the Space over-run in the second Time, which is exhibited by the three Triangles contained between *11* and *22*, is triple that which is run the first Time, and which is represented by the single Triangle *A 11*. Likewise the Space run through in the third Time, and expressed by the Triangles contained with *22* and *33*, is the Quintuple of the same first *A 11*, &c. if the heavy Body at the Beginning of its Motion had had that Velocity, which it acquired at the End, it should have run double the Space: Which is expressed by the Triangle *A B C D*, whereof the Triangle *A B C* is but one Half. But all these Things are only shadowed with Figures, but not demonstrated.

METALS.

METALS are hard and solid Bodies, fusible by Fire, and ductile by the Hammer.

We commonly distinguish six or seven Sorts of Metals, *viz.* *Gold, Silver, Copper, Tin, Iron, Lead*, and *Quick-Silver*. Where we must observe, that the Antients understood by the Name of *Tin*, a certain Mixture of Silver and Lead; but what we call *Tin*, at present, was by them called white or candied Lead.

I have said, that we reckon six or seven Sorts of Metals; for *Mercury* or *Quick-Silver*, is pretended to be rather a metallick Matter, or the Seed and Principle of Metals, than a Metal; for it is neither dissolvable by Fire, malleable, nor fix'd: In effect, it seems to constitute a peculiar Class of Fossils.

As to the Origin and Formation of Metals, various are the Sentiments of Philosophers antient and modern. *M. Tournefort* is of Opinion, that Metals as well as all other Minerals, have their Origin from Seeds, like Plants; that they have Vessels with Juices circulating in them, &c.

Plato will have the Cause of Metals to be a humid Vapour inclosed in the Bowels of the Earth, which being variously intermixed with Parts of the Earth produces various Metals. *Plotin* maintains Sulphur to be the Father of Metals; and an oleaginous viscous Humour, the Mother. *Lidgat* endeavours to prove all Metals generated by a subterraneous Fire; urging among other Reasons, that many Metals when taken out of the Earth, are

are exceedingly hot. *Du Hamel* shews, that *Metals* do not take their Rise either from any vaporous Exhalation, or from Water, or from Earth, but are generated of Mercury, Sulphur, and Salt. He adds, that *Metals* take their Matter and Weight from the Mercury, and their Tincture and Form from Sulphur.

Some Authors own the first Rudiment of a *Metal* to be a saline Substance swimming in Water, which is by little and little carried off. By how much the terrestrial Parts are more exquisitely mixed with the aqueous or humid, by so much is the *Metal* more heavy and firm, as having fewer and smaller Pores. Hence its Ductility for its Parts being extremely small, dense, and complicated, may be drawn out into a very spacious Surface; on which Account it is that Gold exceeds all other *Metals* both in Weight and Ductility: Hence also its Fixity, its Parts being too close and dense to be exhaled. The Water defends the Earth from being burnt, and the Earth the Water from flying off; neither forsakes the other, but each is bound in an undissolvable Knot. The Moisture gives Ductility, the Earth Solidity; where the Mixture is less perfect, whether the Earth or the Water prevail, the *Metal* will neither have so much Weight as having larger Pores, nor will it bear the Fire so well: For if the Earth prevail, as in Iron, or the Water, as in Lead, Heat will set the one at Liberty from the other; the Moisture evaporates, and the Earth is reduced into Scoria, &c.

Dr. Woodward maintains, that all *Metals* now found in the Strata of the Earth, owe their present Condition to the Deluge, when he also imagines, the Strata of Stone, Earth, Marble, &c. were formed. The *metallick* and mineral Matter now found in the perpendicular Intervals or Fissures of the several Strata's whereof the Earth is composed, was, according to him, at the Time of the Deluge lodged in the Bodies of those Strata's, and brought thence, and transmitted into these Intervals since that Time; the Intervals themselves not existing, till the Strata's were formed and broke again, to let the Water from the Earth. Now the Water, which he imagines is constantly ascending from the Abyss towards the Surface of the Earth, continually pervading the Strata, detaches out of their Pores and Intervals such *metallick* and mineral Corpuscles, as it finds loose in its Way, carrying them along with it to the perpendicular Intervals, where having a freer Passage than before, it deserts them, and leaves them in those Intervals. And this he takes to be the Way in which all *Metals*, now found in those Places, were brought thither, and still grow.

Those in the Strata however, he observes, do not nor can grow; but on the contrary, are continually lessened and diminished, by so much as has been conveyed into the perpendicular Intervals, and brought forth on the Surface of the Earth by Springs, and Exhalations from the Abyss, &c.

The same Author complains of the great Uncertainty and Inconstancy in the mineral and *metallick* Kingdom; neither Colour, Figure, nor Situation in the Earth, being to be depended on, so as to make any positive Judgment from them. A Pyrites, or Marcasite, for Instance, shall have the Colour and Brightness of Gold and Silver, and yet afford nothing but a little Vitriol and Sulphur; where a Pebble, in Appearance shall have a Mixture of a valuable *Metal* in it. It is common too to find the same *Metal* shot into a great Number of different Forms, as well as to find different Kinds of *Metal* of the same Form. And as to their Place in the Earth, there is the same Uncertainty, being sometimes found in the perpendicular Intervals or Fissures of the Strata, sometimes interspersed in the Bodies of the Strata, and sometimes in both. The same *Metals* are also placed indifferently in all Kind of terrestrial Matter, or in Strata of very different Natures. They are frequently intermixed with each other, so that it is a rare Thing to find any of them pure and simple; but Copper and Iron shall be in the same Mass, Gold and Copper, Silver and Lead, Tin and Lead; nay sometimes all Six together in the Lump.

The French Chymists have been very curious in their Enquiries into the Nature and Production of *Metals*. *M. Geoffroy*, from a Mixture of Sulphur with a vi-

triolick Salt, and an argillous Earth, brought an Iron, which he maintained to be a new Production, or a Composition resulting from the Assemblage of certain Principles, which existed separately in the Ingredients that formed that *Metal*; in a Word, that it was an artificial Iron. And observing that there were Parcels of this *Metal* in the coloured Ashes of Plants, and of most other inflammable Substances, he concluded that it might be formed there also by the Union of the same three Principles.

This was opposed by *M. Lemery* the younger, who maintained that the Iron contained in the Ashes of Plants, was not formed there by Calcination, but was really existent in the Plants themselves, being raised in their Vessels along with the Juices of the Earth; and further, that all the Ingredients whereof *M. Geoffroy's* artificial Iron was formed, do really contain Iron in themselves, either in smaller or larger Quantities; not the Argilla only, where the Iron is easily discovered by an animated Knife; nor the Oil of Vitriol, which is drawn from a Mineral, the Ground whereof is Iron; but also Linseed Oil, whereof *M. Geoffroy's* Sulphur was made; and even that of Turpentine, sweet Almonds, &c. relating withal the Operations whereby each of those Oils may be reduced to an Earth, wherein there is Iron.

To this it was answered, that in what Manner soever Iron be procured from the several Ingredients separately, there will be still found infinitely less in them, than when mixed; and that of Consequence the Mixture produces Iron. That as for Oils, it is evident, they are not simple Substances, but are composed of an earthy, an acid, and a sulphurous, or inflammable Part; which are the three precise Principles required for the Formation of Iron: So that, according to all Appearances, it is an Assemblage of those Sulphurs, Salts, and Earth in the Oil, that the Iron is formed by Calcination; and therefore, that the Means used to the Iron in the Ingredients, are the very same with those by which it is composed.

Hence it appears, that vegetable Matters contain the Principles of Minerals. But *M. Geoffroy* goes further; and to support his Doctrine of the Production of *Metals*, undertakes to prove, that the Principles of Vegetables, and those of Minerals, are essentially the same; and that one may readily, and with Ease, decompound Minerals, by separating their Principles, and compound them again, by substituting Principles taken from Vegetables, in lieu of those taken away.

To clear this Point, he examines and compares the Principles of mineral and vegetable Salts. The principal in the mineral Class, are Nitre, Sea-Salt, and Vitriol: All which Salts we find in Plants. On the other Hand, the essential Salt of the Parietaria is wholly nitrous, and melts on the Coals like Saltpetre. The fix'd Salts of the Carduus benedictus, Absinthium, Kaly, &c. contain a great deal of Sea-Salt, which crystallizes in Cubes, and precipitates on the Coals. Add, that the greatest Part of the fix'd Salts of Plants calcined to a certain Degree, yield a strong Smell of Sulphur, which can proceed from nothing but a vitriolick Salt, rarified and volatilized by the Oil of a Plant. By these Salts we may be able to judge of all the other Salts of Plants; for the volatile Salts are nothing else but fixed Salts disengaged from the greatest Part of their Earth, and joined with Parts of Oil.

Further, there is scarce any Reason to doubt, that the acid Juices drawn from Vegetables, are of the same Nature with the mineral Acids; with this only Difference, that the Acids of Plants have been extremely rarefied by Fermentation, and united so closely with Sulphurs, that it is not without a great deal of Difficulty that they are separated.

Thus distill'd Vinegar, which we make no Scruple of ranking among the vitriolick Acids, does only differ from Spirit of Sulphur, Spirit of Vitriol, or even the caustick Oil of Vitriol, in that the Acids in the Vinegar are diffused among a great deal of Phlegm, and strongly united to a great deal of Oil, which yet may be separated. By dissolving Copper in the Acid of Vinegar, separated as much as possible from its Oil, there are formed Chrystals, like in Figure to those of blue Vitriol: From all which it appears, that the Salts of Plants

Plants do not differ essentially from those of Minerals.

For Sulphurs, the inflammable or sulphurous Principle is the same in Vegetables as in Minerals. And M. *Geoffroy* even shews, that the Principle of Inflammability in common Sulphur, is the same with that which renders the Fat of Animals, the Oils and Refins of Plants, and the Bitumens of the Earth, inflammable. To which he adds, that this same sulphurous Principle is not only likewise found in metallick Substances, but that it is this which gives them their Fusibility, Ductility, and metallick Forms. Thus Antimony, which is a Substance approaching the nearest of any to a Metal, is little else but a burning Sulphur. By exhaling this it loses its metallick Form, and turns to a Kind of grey Ashes, which being melted, instead of *Metal*, becomes Glass: by melting this over again, and adding to it some inflammable Matter, as Tartar, it returns into a Regulus.

I must confess, that the Sentiment of Dr. *Woodward* (Let it be said with all the Respect I owe to so ingenious an Author) does not appear satisfactory; and some Authors, who have not the same Respect for that great Man, would perhaps turn it into Ridicule, as entirely contrary to Reason, and to Nature's Skill in its different Productions, by robbing her of some of the most marvellous among them, to transfer the Honour thereof to a pure Hazard; and searching the Cause or Principle of a Thing real and evident, in a Thing which has no other Foundation, than mere Suppositions, supported by the specious Reasoning of modern Philosophy. For if *Metals* owe their present Condition to the Deluge, the *metallick* and mineral Matter, now found in the perpendicular Intervals or Fissures of the several Strata of the Earth, being lodg'd at that Time of the Deluge in those several Strata, and brought thence, and transmitted into these Intervals since that Time, by the Water constantly ascending from the Abyss towards the Surface of the Earth; the same Difficulty still remains with regard to the Formation of that *metallick* and mineral Matter. For I would ask Dr. *Woodward*, If there were then no perfect *Metals* before the Deluge, since it must be necessarily inferred from his Sentiment, that the Waters of the Abyss, which were let loose at the Time of the Deluge, and not before, were necessary to usher up the *metallick* and mineral Matter to the Surface of the Earth? Was that Matter, while it continued in the Bodies of those Strata's a perfect Pyrites, or Marcasite? Or did it acquire its Perfection in its Separation from the Bodies of the Strata by the Water alone? If it was a perfect Metal before that Separation, and wanted no further Elaboration than that Separation, and ushering up to the Surface of the Earth, by the Waters of the Abyss, in order for its being easier discovered by avaricious Men, why is it not found in all Parts of the Earth; and why not in a greater Quantity, where there is a greater Abundance of Water near the Sea-shore, for Example, or large Rivers? When Experience convinces us on the contrary, that it is more seldom found in such Places, than in others far distant from them; and that if Gold or Silver be found sometimes in Rivers, it's only in those which have their Source, or wash Places where there are Mines of those *Metals*, as in *Guinea*, *Brazil*, &c. Why are Mines of those precious Metals more frequent in hot Climates than in the temperate or cold? Why are they so different in Quality and Quantity? And why is the Marcasite, as himself confesses, sometimes left imperfect? And why should the Water determine itself to separate that metallick and mineral Matter from the Strata, rather than others, the Bodies of those Strata's are composed of, which are easier usher'd up? As to his pretending to confirm his Sentiment by the Example of a Pebble, which sometimes contains a more perfect Metal than that found in the Mine, it is of no Signification, since a Pebble, like all other Bodies of that Kind, being formed *per Congeriem*, it may very well happen, that in the Assemblage and Coadunation of the Parts it is composed, some metalline Particles are joined with the rest, which by the Friction happening in the Union and Condensation of those Parts, may acquire a new Degree of Perfection.

M. *Tournefort*'s Opinion, that *Metals* have their Origin from Seeds like Plants, and have their Vessels with Juices circulating thro' them, is not better founded than that

of Mr. *Woodward*; unless he could have made to us, as evident Demonstrations of those Vessels and Juices, as he has done of those of Plants, which is impossible; for then a Pyrites or Marcasite being set in the Earth, could grow, and be propagated, as easily as Plants are.

Though I readily agree with him, and this is my own Sentiment, that *Metals* have their Origin from Seeds, if by Seeds he understands a certain glutinous Matter, or Juice, enveloped in the Bowels of the Earth, proper to receive any Degree of Perfection, either from the Heat of the Sun penetrating the Earth, or from that of the subterraneous Fires, or from both acting in Concert. That in the Exaltation of the most subtile Particles of that Matter, from its coarser and most terrestrial ones, and in the different Configuration of their Pores, which cannot be done, without a violent and continual Shaking or Agitation of the Body operated upon, there arises from it a certain Phlegm, which temperates the too great Activity of the saline and sulphureous Particles in their Exaltation and Sublimation, hinders them from being set on Fire by the powerful Agent, and forces them, at last, after they have been exhausted of almost all their Activity, in the violent Effort made in their Exaltation, to fall back on one another, the saline Particles sheathing themselves, or hooking in the sulphureous one, so as to form, at last, that compact Texture we call *Metals*; which are more or less perfect, according as the Matter operated upon was more or less disposed to receive its last Degree of Perfection, and the Agents were more or less interrupted in their Operation. I am even of Opinion, that the Sun operates then in the Bowels of the Earth, very near in the same Manner as he does in the Marshes on the Coast of *Britanny*, where Salt is made.

As to the Species of *Metals* there are four, which the Chymists call *imperfect*, because, say they, their Principles are not bound so fast together, but that the Force of a common Fire destroys them; these are Iron, Copper, Lead and Tin: The others which are Proof against common Fire, are Gold and Silver, called *perfect Metals*.

In the four first it is easy to see the Principle of Inflammability; they become all fusible by the Addition of Salt-petre, either in a greater or less Degree.—Iron is that wherein this is the most visible; next, Tin; then Copper and Lead.—But the Principle is more conspicuous still, in the Dust or small Filings of the *Metals*, let fall in the Flame of a Candle, than in the Lamp.

For Gold and Silver, the sulphureous Principle is not so obvious; no Heat, but that of the Sun collected into a Focus, is able to decompose them: But no Doubt they have the same Principles with the other *Metals*, though not so easily seen.—In Gold, as well as in other *Metals*, is an Earth capable of Vitrification, as appears by the Glass remaining after the Calcination of Gold in a Burning-Glass; and there is Reason to believe, that the greatest Part of what is exhaled in Smoke, during the Operation, is the sulphurous Principle mixed with Salts.

As to Silver, there is something in it extremely various: When purified with Antimony, it vitrifies with a Burning-Glass; but if purified with Lead, it leaves nothing behind but grey Ashes.—The Basis of this *Metal* is doubtless an Earth, capable of Vitrification; and what exhales in Smoke, is apparently a Mixture of Sulphur, Salt, and a little Earth volatilized by the Fire.

From all which, and many more Observations of the same Kind, M. *Geoffrey* draws the following Conclusions, That the Substances whereof *Metals* are composed, do not differ essentially from those which compose Vegetables. That the imperfect *Metals* are composed of a Sulphur, vitriolick Salt, and vitrifiable Earth. That this sulphureous Principle is more or less strongly joined with the other Principles; very strongly in Gold and in Silver, less in Antimony, and very little in mineral Sulphur. That the Principle of Inflammability may be separated from *metallick* Substances, either by cumulating Fire, or by the Sun. That the *Metal*, thus despoiled of its Principle, is converted into Ashes, and that these Ashes, pursued further with a violent Fire, vitrify; and that

such Ashes or Glasses, by the Application of some inflammable Matter, re-assume the *metallick* Form they had lost. That it is by this Means Linseed-Oil turns Argilla into Iron. That if we knew all the other *metallick* Earths, they might likewise be immediately converted into *Metals*, by the Projection of some inflammable Matter. That it is the saline and earthy Parts, found in Oil of Vitriol, that furnish the earthy vitrifiable Part, which makes the Basis or Ground of Iron, and that it receives the *metallick* Form from the sulphurous Principle of the Oil. That the Iron found in the Ashes of Plants, was produced there in the same Manner: And, that it is a Composition of the vitrifiable Earth of the Plants, the Acid of these Plants, and their oily or inflammable Principle.

The same Author, the better to ascertain the constituent Parts of *Metals*, made a great Number of Experiments on them with his Royal Highness the Duke of Orleans's large Burning-Glass; the Result whereof falls in with, and confirms the Doctrine laid down above. From those Experiments he gathers, that the four *Metals* which we call imperfect, *viz.* Iron, Copper, Tin, and Lead, are composed of a sulphurous, or oily Substance, capable of burning, and a *metallick* Earth capable of Vitrification. That from this Sulphur proceeds the Opacity, Brightness, and Malleability of a *Metal*. — That this *metallick* Sulphur does not appear at all different from the Oil or Sulphur of Vegetables, or even Animals; and that it is the same in Mercury, as in the four imperfect *Metals*. That these four *Metals* have for their Basis an Earth susceptible of Vitrification; that this Earth is different in each of the four *Metals*, in that it vitrifies differently in each; and that on this Difference in vitrifying, depends the Difference of *Metals*.

Boerhaave, after a Survey of the several *Metals*, their Characters, Properties, Preparations, Uses, &c. draws the following Corollaries concerning the general Nature of *Metals*. 1. That which distinguishes *Metals* from all other Bodies, as well as from each other, is their Weight: Though every *Metal* has its peculiar Weight, which no Art is able to imitate, and which depends, as *Helmout* and the Chymists express it, on the omatick Homogeneity of their Parts. Now the later Philosophers have proved, that all corporeal Magnitude has just so much Reality in it as Weight; and therefore if you have found the Weight of any *Metal*, you have at the same Time found its Capacity. Sir *Isaac Newton*, treating of Gravity, and *Huygens* of the Pendulum, shew that Weight and Reality are correspondent.

2. The *Metals* appear to be simple, yet are really Compounds. Their component Principles, according to the Antients, are Sulphur and Mercury; to which some of the Moderns have added Salt: But it is certain Salt is no constituent Part, or Ingredient of *Metals*, but rather something external adhering to them. All *Metals* consist of two Parts or Principles; Mercury as the Basis or Matter; and Sulphur as the Binder or Cement: The first the Substratum or *metallick* Matter; and the second, that which renders it fixed and malleable. The Mercury, it is to be noted, is the same with our Quick-silver, only defecate and clear of any heterogenous Matter; whereas the common Quick-silver is always mixed. As to the Sulphur, it is not the vulgar fossil Sulphur, but a peculiar Sort of Matter, specifically denominated *Sulphur of Metals*, concluded by some of our latest and best Chymists, particularly M. *Homborg*, to be Fire; which being mixed with the Mercury, fixes it, and according to the different Degrees of its Union, and Cohesion therewith, produces different *Metals*.

Those who espouse this Sentiment of *Boerhaave*, pretend, that it is confirmed by an Experiment of Mr. *Boyle*, who after having retain'd Mercury a long Time in a moderate Fire, took a Piece of Gold out of it, which it was apparent was not in the Mercury, before it was exposed to the Fire. That M. *Homborg* has an Experiment to the same Effect; from which he concludes, that Gold consists of a sulphurous igneous Part, and a heavy mercurial Part fixed thereby; and that upon taking away the sulphurous or fiery Part, the Gold is converted into fluid Mercury.

3. All *Metals* must first be Mercury, ere they be Gold; and the Thing super-added to common Mercury,

whereby it is prevented from becoming Gold, is a sharp volatile Body, which when heated, becomes corrosive, and emits Fumes; which are the Properties of the fossil Sulphur.

4. If any *Metal*, or other Body, could be found that only differ'd from Gold, in its wanting Weight, it were impossible ever to make Gold of it; and on the contrary, if a Body could be had that is as heavy as Gold; all the other Properties, as Colour, Fixity, Ductility, &c. might easily be added. And hence the more knowing among the Alchymists, hold the primary Matter of Gold to be Quick-silver; which, say they, is Gold at Heart, as coming nearest to Gold in Point of specific Gravity. Only there is a corrosive Body, *i. e.* Sulphur, adhering to it, which, if it were separated, you would have Gold; or if it were only inverted, Silver.

And accordingly, whoever would make Gold out of any other foreign Matter, must remember, that the more his Matter differs from Mercury in Weight, &c. the less Gold it will make.

5. Therefore *Metals* are transmutable into one another: For if Mercury be the common Matter of all *Metals*, and if all the Difference lie in the fixing Spirit of the Sulphur, which, as it is less or more subtle, or pure, constitutes this or that *Metal*; it is no Way improbable they should be transmuted by a purer fixing Sulphur, taking Place of a corrosive one, and fixing the Matter into a more perfect *Metal*.

6. The purest *Metals* result of the purest and most defecate Mercury, and the smallest Quantity of the subtlest Sulphur. Hence Mercury of Gold is heavier than common Mercury, and has always some impure Part that is lighter than Gold; and could that be taken away, and the fixing Spirit be added, it would become heavier than Gold.

7. The imperfect *Metals* consist of imperfect Mercury, and imperfect Sulphur, with some other variable heterogeneous Matter in it: This fused by the Fire, emits a Fume, which whitens Copper, after which the Sulphur exhales yet further. The Evidence of such a third Matter is evidenced hence, that all these baser *Metals* are resolvable not only into Mercury and Sulphur; but also into Scoria or Sordes, which are lighter and more earthy than either of the other, and accordingly swim therein.

8. Upon the whole it appears, that in the three nobler *Metals*, Gold, Mercury, and Silver, it is principally the greater or less Proportion of the Sulphur to the Mercury, that determines them to be Gold, Mercury, or Silver: That it is by this Proportion those several *Metals* are defined and denominated. And that from this Difference of Proportion, flow all the specific Differences of Colour, Weight, Fixity, Ductility, Volatility, Fusibility, Solubility, Salubrity, &c.

9. That in the other baser *Metals*, besides this different Proportion of the two Principles, there intervenes another Cause of Diversity, *viz.* a third Principle, or Matter of an earthy Kind, and very different from either of the rest; which adhering to the pure elemental Sulphur, corrupts and adulterates, and variously modifies: And from the different Circumstances of this third Principle, considered along with those of the Sulphur itself, result the specific Differences of the more imperfect *Metals*, as to Weight, Colour, &c.

I beg Leave to refute every one of those Corollaries deduced from *Boerhaave's* Doctrine concerning the general Nature of *Metals*.

1. Though it be very true that *Metals* are really compound, it is notwithstanding very false, that they consist only of two Parts or Principles, *viz.* of Mercury as the Basis or Matter, and of Sulphur as the Binder or Cement, since to suppose Mercury the Basis of the *Metals*, it must be supposed likewise susceptible of Fixibility, and capable to receive any Impression from heterogeneous Bodies, so as to lose entirely its natural Fluidity, and form a solid and compact Compositum with them, and so intimate in their Cohesion as to never be separated afterwards, even by the greatest Efforts Art has made to that Purpose, but all in vain; which cannot be said of Mercury, which, let it be ever so much disguised under any Form whatever, reassumes always its former natural Fluidity by Help of Fire; which Phenomenon could

could never be seen yet in perfect *Metals*, such as Gold and Silver; whatever Experiments have been made by Alchymists for that Purpose, and to make an Analysis of *Metals*, in order to get a clear Insight into their Composition, which would be a very great Help towards imitating Nature afterwards in their Formation. Even in the Fixation of Mercury by Verdigrease, which is the strongest that can be made by Art; the Mercury, by giving to it a violent Degree of Heat, either re-assumes its former Fluidity, or vanishes into Smoak, which Smoak is nothing else but the mercurial Particles themselves, which are never lost, but could be found yet in some Parts of the Place where the Operation is made; and if this be the natural Quality of Mercury, as a daily Experience convinces us it is; how can it be supposed the Basis of a perfect *Metal*, without confessing at the same Time, that the constituent Parts of such a *Metal* can easily be separated, since the Basis thereof should be so susceptible of the Impressions of Fire, which is contrary to Experience, and consequently M. *Homberg's* Sentiment, that the Sulphur he admits for the other Constituent of *Metals* is Fire, which being mixed with Mercury fixes it, is false; since it is false that Fire alone has the Power to fix Mercury; but has on the contrary, that of expelling it, as we see in the different Operations wherein Mercury enters, as in gilding, &c. For the igneous Particles, far from penetrating the globulous ones of Mercury, as M. *Homberg* pretends, they on the contrary slide on them, as a Needle or pointed Iron would do on a smooth Ivory Ball, and serve only to accelerate their Motion. As to the Experiment of Mr. *Boyle* to confirm Mess. *Boerhaave* and *Homberg's* Opinion, if I had lived in Mr. *Boyle's* Time, and that ingenious Gentleman, for whom I have the greatest Veneration, had assured me that he had taken out of his Crucible a Piece of Gold, formed of Mercury he had retained a long Time at a moderate Fire, I would not have contradicted him, though I must have silenced my Reason, to believe him; for if even a moderate Fire could have fixed Mercury so as to have changed it into Gold; and Mr. *Boyle* had discover'd that Degree of Fire, why have not the other Alchymists who have worked since to discover the same Secret, and, without Doubt with as much Assiduity, as ever Mr. *Boyle* did, been as happy as he was in that Discovery? Besides, by observing that a moderate Fire fixes Mercury, so as to make of it the most perfect of all *Metals*, it gives to understand, that a violent one is not capable to produce that Effect, under the Supposition perhaps that a too violent Agitation of the igneous Particles is communicated to the mercurial ones, naturally much inclined to Motion; therefore, if even it could be supposed, that the Fire considered by *Boerhaave* and *Homberg*; as a Constituent of Gold, was moderate enough, in the Mine, to fix the Mercury so as to make it Gold; that Fire acquiring a new and far greater Degree of Action in the Crucible, far exceeding that Moderation necessary to fix the Mercury, must excite that Agent to destroy its own Works by evaporating what it had fixed, whereby the Basis being destroy'd, the whole Edifice must fall to the Ground.

2. The Weight of *Metal*, its Colour, Fixity, Ductility, &c. do not proceed from the greater or less Quantity of Mercury it contains, but from the more or less intimate Union of the Parts it is composed of, which renders it more or less heavy, viz. more, when the Union is very intimate; and less, when the Cohesion is not so great, or the Parts are looser, from the different Configuration of its Pores; whence proceeds a different Reflection of the Light, its greater or lesser Fixity, Ductility, &c.

3. From the Cohesion of the Parts, and the different Configuration of the Pores, proceeds likewise the greater or lesser Perfection of *Metals*; and not from the Perfection, or Imperfection, of the Parts they are composed of. For it is but a mere Supposition to say, that the Difference in their Degrees of Perfection consist in the Impurity of the Mercury, and the Imperfection of the Sulphur; no Alchymist having been capable yet to discover any Mercury in the frequent Analyses they have attempted, of the different Sorts of Metals; of which I'll give here a more particular Description, beginning with Gold, reckon'd the most perfect of them all.

GOLD, is a yellow *Metal*; the heaviest, purest, most ductile, and shining, and on those Accounts the most valuable of all *Metals*.

The Weight of Gold is to that of Water, as 19636 to 1000. — A cubick Inch of pure Gold weighs twelve Ounces, two Drachms, and fifty-two Grains; and the cubick Inch of Silver, six Ounces, five Drachms, twenty-eight Grains. — The Pound Weight, or twelve Ounces Troy of Gold, is divided into twenty four Carats.

The Value of *Gold* is to that of Silver as 14 to 1; indeed, this Proportion varies as Gold is more or less plentiful: For *Suetonius* relates, that *Cæsar* brought such a Quantity of Gold from *Italy*, that the Pound of Gold was only worth seven Pounds and a half of Silver. — Standard Gold is worth 44*l.* 10*s.* Sterling the Pound Weight: Standard Silver is worth 3*l.* the Pound, or 5*s.* the Ounce.

The first Characteristick, or Property of *Gold*, is that it is the heaviest of all Bodies; proceeding from the Union or Cohesion of its Parts, which is closer and more intimate than in any other *Metal*.

Its second Character is, that of all known Bodies it is the most ductile and malleable, proceeding from the Configuration of its Pores, which being diversified and not all in the same Order of Opposition, give Way easily to one another. Of all Bodies, its Parts have the greatest Degree of Attraction, i. e. cohere with the greatest Force, as already observed.

This Tenacity or cohesive Force of Gold depends altogether on the sulphurous Particles which enter into its Composition, being free in their Sublimation in the Mine, from these earthly and heterogeneous Bodies which before rendered them spongy, and improper for a close Cohesion.

The third Character of *Gold* is its Fixedness in the Fire, in which it exceeds all other Bodies. This Property seems to result from the Equality of its Parts, which equally aid and support each other, and have equal Pores and Interstices through which the fiery Corpuscles find an easy Passage. The Prince of *Mirandola*, Mr. *Boyle*, and other Chymists, furnish divers Experiments to illustrate this wonderful Fixity. After laying a Quantity of *Gold* two Months in the intensest Heat imaginable, it is taken out without any sensible Diminution of Weight. It must be added however, that in the Foci of the large burning Glasses of *Tschirnhausen* and *Vilette*, even Gold itself volatilizes and evaporates. After this Manner we are told from the Royal Academy at *Paris*, a Quantity of pure Gold was vitrified (which contradicts the Sentiment of Mess. *Boerhaave* and *Homberg*, that no Salts enter the Composition of Gold) and that the Glass being fused with a Quantity of Grease was restored into Gold; which is a Confirmation of my Sentiment, that there must be some sulphurous Particles in the Formation of Gold, wherein the most acute Points of the saline ones are sheathed.

Its fourth Character is, not to be dissoluble by any Menstruum in Nature, except Aqua Regia and Mercury, the Basis of Aqua Regia being Sea-Salt, which is the only Salt we know of that has any Effect on Gold; and it has its Effect in what Form soever applied, whether as fluid or solid, in Substance or in Spirit.

Mr. *Boyle* made a Menstruum of Butter of Antimony which dissolved Gold with great Facility; and hence concluded that *Gold* might be dissolved without Sea Salt; but by Mistake, the effective Part even of this Menstruum being still Sea Salt, which is an Ingredient in sublimate Mercury wherewith Butter of Antimony is made.

The seventh Character is, that it readily and spontaneously, as by some magnetick Virtue, attracts and absorbs Mercury, though what my Lord *Bacon* writes, viz. that Gold in imbibing Mercury increases in specific Gravity, we doubt, is but ill warranted. It is more than probable it must be increased in Bulk more than in Weight, and consequently must be specifically lighter. It may be added, that as soon as the Mercury enters the *Gold*, the *Metal* becomes soft like Paste; though in my Opinion it does not at all enter the Gold, but being thrown into the Crucible, at that very Instant the Gold is on the Point of being in Fusion, and consequently while its Parts are much loosened, by

the igneous Particles; it glides between the Interstices of those Parts thus loosened, shakes by means of the continual Agitation of its Particles, heightened by the Fire, and disunites the whole Frame, so as to reduce it into Powder, with which uniting itself, loads itself thereby with a Burthen which stops its natural Fluidity, and offers it to our Sight as a Sheath to the Gold it is amalgamated with.

The eighth Character is, that it withstands the Violence both of Lead and Antimony, *i. e.* being fused in the Coppel along with either of those Matters, it does not dissipate and fly off with them in Fume, but remains fixed and unchanged.

All other Metals except Gold and Silver melted with Lead, perish with it, and evaporate by Fire; and in Antimony all other Metals except Gold, even Silver itself undergo the same Fate. Thus if a Mass consisting of Gold, Silver, Stones, Copper, &c. be fused together with Antimony, the several Matters become separated, and all but the Gold rise to the Surface in Form of a Scoria, and is blown off with Bellows; but the Gold remains behind, much purified, as having lost all its heterogeneous Parts along with the other Metals; and hence Antimony is used as the Test of Gold.

The ninth Character is, that of all Bodies it is the simplest (the primary Elements being here excepted) by simple we here mean that minutest Part has all the physical Property of the whole Mass. Thus if a Grain of Gold be dissolved in Aqua Regia, and a single Drop of the Dissolution be taken, a Quantity of Gold may be separated therefrom, which shall only be the millionth Part of the Grain, and yet have all the Characters of Gold. Or if you fuse a Grain of Gold with a large Mass of Silver, and mix the two together, so that the Gold become equally diffused through the whole Mass; you will have in every Particle of the Mass a Particle of perfect Gold; accordingly dissolve any Part of the Mixture in Aqua Fortis, and a Quantity of Gold will precipitate to the Bottom; bearing the same Proportion to the Grain that the Part dissolved did to the whole Mass, on which Principle depends the Art of assaying.

All the known Parts of the Earth afford this precious Metal; though with a deal of Difference in Point of Purity, and Abundance: Europe, so fertile in other Respects, comes short of all other Quarters in Gold. America furnishes the most; and particularly the Mines of Peru and Chili. That of Asia is esteemed the finest, particularly that of Meranibabo in the East Indies: Tho' the Spaniards assure us, that they get Gold out of some of their Peruvian Mines, twenty-three Carats fine, before it be purified. Add, that the Gold of Axima on the Coast of Africa, is found from twenty-two to twenty-three Carats.

Glauber, an eminent Chymist, holds, that there is not any Sand, or Stone, but Gold may be procured from, Limestone only excepted: The Misfortune is, that the Expence of separating it, much surmounts the Profits.

Gold is chiefly found in Mines; though there is some, also, found in the Sand, and Mud of Rivers, and Torrents, particularly in Guinea: This last is in Form of a fine Dust, and for that Reason called Gold Dust. — Glauber tells us, that there is a third Sort of Gold, scarce found any where but in the Drains of the Mountains of Chili, which they separate from the Earth by washing; whence the Places where it is found, or separated, are called Lavadero's.

This Earth is usually reddish, and very fine: At about six Foot deep it is mixed with Grains of large Dust; and from hence commences the Stratum, or Bed of Gold; between are Banks of soft bluish Stone, mix'd with yellow Threads, which yet are not Gold, but only Pyrites, or Marcasite of Gold.

When they have discovered any of this Earth, they endeavour to bring Rivulets to it (which in those Mountains are very frequent) in order by Force thereof to tear off the upper Earth and lay the golden Stratum bare. This they forward by digging with Spades, &c. as soon as the golden Earth is uncovered, they turn off the Water, and dig up the Soil by Force of Arm, and loading it on Mules, carry it to the Lavadero's, *i. e.* a Sort of Basins of Water where the Earth undergoing divers repeated Lotions in different Waters, the earthy

and impure Part is all separated and carried off by the Stream, and the Gold left at Bottom.

This Method of getting Gold is immensely gainful; the Expences being but trifling, compared with those accruing in the common Way by Machines, Fire, and Quicksilver: The richest of these Lavadero's is that del Estanua del Rey, twelve Leagues from Concepcion; a Port of the South Sea. — Thuringia, and some other Places along the Rhine, are the only Places in Europe; where Gold is got in this Manner.

The Gold of Mines is of two Kinds: The one in small Pieces, or Grains of various Forms and Weights. Of this Sort, among the Specimens sent by Columbus into Spain, to let them see the Richness of his Discovery; there were some of eighteen Ounces Weight; and the Relations of those Days assure us, that in 1502, there were others found of thirty-two Pounds Weight.

The other Kind of Gold is dug up in stony Glebes; which is what they call the mineral or Ore of Gold: These Glebes are of various Colours, and usually one hundred and fifty, or one hundred and sixty Fathoms deep. Along with the Gold they usually contain some other mineral Matter, as Antimony, Vitriol, Sulphur; Copper, or Silver, particularly the last; without some Share of which it is scarce ever found.

To separate the Gold, they first break the metalline Matter with Iron Mallets pretty small, then carry it to the Mills, where it is grounded into a very fine Powder; and lastly, pass it through several Brass-wire Sieves one after another, the last as fine as any of our Silk Sieves.

The Powder thus prepared is laid in wooden Troughs, with a proper Quantity of Mercury and Water, and there left to knead and saturate in the Sun and Air, for twice twenty-four Hours. After this the Water with the recementitious Earth is drove out of the Tube, by means of other hot Waters poured thereon: This done, there remains nothing but a Mass of Mercury with all the Gold that was in the Ore. The Mercury they separate from it by Distillation, in large Alembicks: The Gold in this State is called Virgin Gold, as well as that found in the Sand of Rivers, or that in Grains in the Mines, in regard none of them have passed the Fire. After this they usually fuse it in Crucibles, and cast it into Plates or Ingots.

SILVER, is a white, rich Sort of Metal; being the finest, most ductile, and most precious of all Metals except Gold; because there is not so intimate an Union between the constituent Parts of Silver, as there is between those of Gold; neither has it so great a Number of Pores, ranged in a perpendicular Manner, all of them being very small besides, which is the Cause of its reflecting Light with more Force than any other Metals; whence its Whiteness: It also receives in its Composition a greater Number of sulphurous Particles than Gold, and less defecated, whence it is subject to more Mutations; and is dissolved with a greater Facility.

There are Silver Mines in all the four Quarters of the World. Europe has its Share; nor is England quite destitute thereof, though it has none of much Value.

The Mines of Peru, and some other Parts of America, are much the richest and most abundant; they appear almost inexhaustible, particularly those of Potosi, which continue to be dug with equal Advantage as when first discovered, with this only Difference, that the Veins which were then almost in the Surface of that famous Mountain, are now sunk to prodigious Depths, the Workmen going into them by a painful Descent of four or five hundred Steps. Many Millions of Indians have perished in them, and prodigious Numbers continue to be destroy'd yearly.

The Ores or mineral Stones they dig, are not all of the same Quality, Consistence, or Colour: Some are white or Ash-colour spotted with red or blue, and called Plata blanca; others are black, and called Promoranco: These last are the richest, and the easiest wrought, no Mercury have been here needed, nor any Thing but to put them in the Fire, where the Lead evaporating, leaves the Silver pure. The Indians, who, till the Arrival of the Spaniards knew nothing of the Use of Mercury, melted none but of this Kind of Mineral. The Rossiter, is another black Mineral distinguished by whetting and rubbing it against Iron, which turns it red.

red. It is very rich, and the *Metal* it yields of the best Sort. The *Joroche* burns like Talc, and looks as if silvered, though it does not yield much. The *Paco*, is a yellow Red, very soft, and found almost broke in Pieces; it is not rich. The *Cobrisso* is green and half friable. Though the Silver of this be visible, yet it is drawn from it with great Difficulty, by reason of the Copper wherewith it is intermixed. Lastly, the *Araunea*, which is only found in *Potosi*, and that only in the Mine of *Cotamito*, consists of Threads of pure Silver, interwove like a *Silver* Galoon, that has been burnt to get out the Silk.

The *Silver* Veins, of what Quality soever, are usually richer in the Middle, than towards the Extremes; but the richest Places are those where the Veins intersect. It is reckoned a great Addition to the Richness of a Mine to be near a River, for the Advantage of Mills to grind Ore. At *Lipes* and *Potosi*, for Instance, the Caxon of Ore must yield ten Marks to defray Expences; whereas at *Tomava*, there need not above five.

The most usual Way of separating the *Silver* from the Ore, is by what they call *Pinea's*. Sometimes, however, they use nothing but Fire frequently repeated; or Aqua fortis.

The Manner of doing it by *Pinea's*, is to break first the Ore, or mineral *Silver* dug out of the Veins of the Mine; then grind it in Mills for the Purpose, driven by Water, with Iron Pestles of two hundred Pound Weight. The Mineral thus pulverized, is next sifted, then worked up with Water into a Paste, which when half dry is cut into Pieces, called *Cuerpo's*, a Foot long; weighing each about two thousand five hundred Pounds.

Each *Cuerpo* is again kneaded up with Sea Salt, which dissolving incorporates with it. They then add Mercury, from ten to twenty Pounds for each *Cuerpo*, kneading the Paste afresh until the Mercury be incorporated therewith. This Office being exceedingly dangerous, by reason of the noxious Qualities of the Mercury, is the Lot of the poor *Indians*.

This Amalgamation is continued for eight or nine Days: Some add Lime, Lead, or Tin Ore, &c. to forward it; and in some Mines they are obliged to use Fire. To try whether or no the Mixture or Amalgamation be sufficient, they wash a Piece in Water, and if the Mercury be white, it has had its Effect; if black, it must be further worked.

When enough it is sent to the Lavatories, which are large Basons, that empty successively into one another. The Paste, &c. being laid in the uppermost, the Earth is then washed from it into the rest by a Rivulet turned upon it; an *Indian* all the while stirring it up with his Feet, and two other *Indians* doing the like in two other Basons.

When the Water runs quite clear out of the Basons, they find the Mercury and Silver at Bottom incorporated. This Matter they call *Pella*, and of this they form the *Pinea's* by expressing as much of Mercury as they can; first by putting it in wooden Bags, and pressing and beating it strongly, then by stamping it in a Kind of wooden Mould of an octagonal Form, at the Bottom whereof is a Brass Plate pierced full of little Holes.

The Matter being taken out of the Mould is laid on a Trivet, under which is a large Vessel full of Water, and the whole being covered with an earthen Head, a Fire is made around it.

The Mercury still remaining in the Mass is thus reduced into Fumes, and at length condensing is precipitated into the Water, leaving behind it a Mass of Silver Grains of different Figures, which only joining or touching at the Extremes, render the Matter very porous.

This then is the *Pinea's* or *Pignes*, which the Workmen endeavour to sell secretly to the Vessels trading to the *South Sea*; and from which those who have ventured to engage in so dangerous a Commerce, as the Merchants of *St. Malo* in *Britanny* did in the Beginning of this Century, have made such vast Gains, particularly *P'Espine d'Allicant*, who, from a Merchant of Butter, became by that Commerce to the *South Sea*, so immensely rich in a few Years, that he was capable at last to lend the late King *Louis XIV.* during that long destructive War, he carried on against all *Europe* leagued against him, six Millions of Livres, all in *Pinea's* or

Pignes of Silver; for which signal Service the King made him a Nobleman. And when the King offered to pay him the Interest of his Money, told his Majesty, that the Honour of having succoured the State, was worth both the Interest and Principal.

Indeed the Traders herein must be very careful, for the *Spanish* Miners are errant Knaves, and to make the *Pignes* weigh more, make a Practice of filling the Middle with Sand or Iron.

What renders the working of the Mines exceedingly dangerous, is the Exhalations arising from them; which are even felt on the Outside, and make an Impression on Animals grazing in the Neighbourhood; but in the Inside stupify the Miners, none of whom can bear so poisonous an Air above a Day together. Sometimes it is so fatal that it kills them on the Spot, and obliges them to stop up the Veins again whence it exhales. The Mines of *Potosi* are much the least subject to them, and yet without the Herb Paraguay, the Infusion whereof is taken by the Miners, as we do that of Tea, those Mines would soon be abandoned.

Though the Mines of *Potosi* and *Lipes* still keep up their Reputation, yet are there several discovered within these few Years, that exceed them much in Richness: Such are the Mines of *Aruro*, eight Leagues from *Arica*, and those of *Alachæ* near *Cusco*, opened in 1712. It is remarkable that most of the Mines in *America*, are found in cold and barren Places.

The Method of separating *Silver* from the Ore, in *Europe*, is the same as that of Gold; that is by Means of Quicksilver; with this Difference, that for *Silver*, to every fifty hundred Weight of Ore, is added one hundred Weight of Rock Salt, or some other natural Salt.

To separate the *Silver* from the Mercury wherewith it is amalgamated, they have a Furnace open a-top; and the Aperture covered with a Kind of a Capital made of Earth, of a cylindrical Form; that may be clapped on or taken off at Pleasure. The Mass of *Silver*, and Mercury being laid in the Furnace, the Capital applied, and the Fire lighted underneath; the Quickilver raised by the Action of the Fire, in form of Vapour, is caught in the Capital, and taken thence to be used in the second Operation.

The Standard of fine *Silver* is 12 Penny-weights, each consisting of 24 Grains: When it is below this, it must be raised to it by refining.

COPPER, is a hard, dry, heavy, ductile Metal, found in Mines in several Parts of *Europe*.

Copper is of all Metals the most ductile, and malleable, after Gold and Silver; and abounds much in Vitriol, and an ill-digested Sulphur.

Copper is found in Glebes or Stones of various Forms and Colours; which are first beaten small and washed, to separate them from the earthy, &c. Parts wherewith they are melted, and the melted Matter run into a Kind of Moulds, to form large Blocks, by some called *Sulmons*, and by others *Cakes of Copper*: This is the ordinary Copper.

To render it more pure and beautiful, they melt it again once or twice; some of its coarse earthy Parts being left at each Fusion, and a Quantity of Tin and Antimony added in each: In this State it is called *Rose Copper*, in Latin *Æs pelosum*.

Copper is also, sometimes, found native and pure in the Mines, either in Form of Threads, or in Flakes, Plates, Grains, or other Makes and Lumps: This is called *Virgin Copper*.

Of a Mixture of Copper and *Lapis Calaminaris*, is formed Brass; which, in *France*, we call *Cuivre jaune*, yellow Copper, in Contradistinction to natural Copper, which we call *Cuivre rouge*, red Copper.

Iron, is a hard, fusible and malleable Metal, of great Use in the Affairs of Life: It consists of an Earth, Salt, and Sulphur, but all impure, ill mixed, and digested, which renders it extremely liable to Rust.

Iron is the hardest, driest, and the most difficult to melt of all Metals. It may be softened by heating it often in the Fire, hammering it, and letting it cool of itself; and it is hardened, by extinguishing it in Water.

There is a great Number of Iron Works in most Parts of *England*, those in the Forest of *Dean* in *Gloucestershire* are in most Repute. The Ore is there found in great Abundance.

dance, differing much in Colour, Weight, and Goodness. The best called *Etish Ore*, is of a bluish Colour, very ponderous, and full of little shining Specks, like Grains of Silver; this affords the greatest Quantity of *Iron*, but being melted alone produces Metal very short and brittle, and therefore not so fit for common Use: For the remedying whereof the Workmen make use of another Sort of Material termed *Cinder*, which is nothing but the Refuse of the Ore, after the Metal has been extracted; and which being mingled with the other, and in a due Quantity, gives it that excellent Temper of Toughness which causes this *Iron* to be preferred before any brought from foreign Parts.

After they have provided the Ore, they first work it to calcine it, which is done in Kilns, much after the Fashion of our ordinary Lime-Kilns: This they fill up to the Top with Coal and Ore, *Stratum super stratum*, that is, one Lay upon another; and so putting Fire at the Bottom they let it burn till the Coal be wasted, and then renew the Kilns with fresh Ore and Coal, in the same Manner as before. This is done without Fusion of the Metal, and serves to consume the more drossy Part of the Ore, and to make it malleable, supplying the beating and washing which are used in other Metals.

From hence they carry it to their Furnaces, which are built of Brick or Stone, about 24 Feet square on the Outside, and near 30 Feet in Height within, not above 3 or 10 Feet over where widest, which is about the Middle; the Top and Bottom having a narrow Compass much like the Shape of an Egg. Behind the Furnace are fixed two large Pair of Bellows, the Noses of which meet at a little Hole near the Bottom; these are compressed together by certain Buttons placed on the Axis of a very large Wheel, which is turned about by Water, in the Manner of an over-shot Mill. As soon as these Buttons are slid off, the Bellows are raised again by the Counterpoise of Weights, whereby they are made to play alternately, one giving its Blast while the other is raising.

At first they fill the Furnace with Ore and Cinder, intermixed with Fuel, which in those Works are always, Wood or Charcoal, laying them hollow at the Bottom, that they may more easily take Fire; but after they are once kindled, the Materials run together with a hard Cake or Lump, which is sustained by the Fashion of the Furnace; and through this the Metal as it melts, trickles down into the Receivers set at the Bottom, where there is a Passage open, by which the Men take away the Scum and Dross, and let out the Metal as they see Occasion. Before the Mouth of the Furnace there lies a great Bed of Sand, wherein they make Furrows of the Shape into which they would have their *Iron* cast. As soon as the Receivers are full, they let in the Metal, which is made so very fluid by the Violence of the Fire, that it not only runs to a considerable Distance, but stands afterwards boiling for a good while.

When the Furnaces are once at Work, they keep them constantly employ'd for many Months together, never suffering the Fire to slacken Night or Day, but still supplying the wasting of the Fuel, and other Materials, with fresh poured in at the Top: Charcoal is used altogether in this Work, Sea-coal will scarcely do.

From these Furnaces the Workmen bring their *Sows* and *Pigs* of *Iron*, as they call them, to their Forges, where it is wrought into Bars.

Tin, is a whitish Metal softer than Silver, yet much harder than Lead.

The constituent Parts of *Tin*, and those of Silver, are no otherwise different from one another, but in their Preparation, which is less perfect in *Tin* than in Silver, and in their Cohesion, which is less intimate in *Tin* than in Silver; which Imperfection proceeds chiefly, as well from the Imbecility of the Heat, occasioned by the Difference of the Climates, or the Interposition of heterogeneous Bodies, between the Agent and the Patient, as by the cacoehimous Disposition of the Matrice, where the *Marcasite* is formed. For though the Pores of *Tin* are as exiguous as those of Silver, and equally unpervadable to the Light, whereby it reflects with the same Force on *Tin* as it does on Silver; the Texture of those Pores being for the greatest Part composed of an ill digested Sulphur, is easily broken, and destroy'd by Fire.

This is my own Sentiment on *Tin*.

Boerhaave says, that the principal Characters and Properties of *Tin* are, that it is the lightest of all Metals, very little ductile or elastick; the most fusible and volatile of them all, and scarce dissoluble by Acids, unless the weaker Sort, and easily and intimately miscible with other Metals, the Ductility whereof becomes diminished by such Mixture.

The same Author concludes with me, that Sulphur is the prevailing Ingredient in *Tin*, and deduces several of its particular Properties therefrom. He adds, that could the Metal be perfectly purged of this heterogeneous Sulphur, it is probable it would be found no other than Silver.

Several Authors had before noted a great Conformity in divers Particulars, between the two Metals, as that both grow better when dissolved by Acids; that when fused together there is scarce any separating them again, not even by Lead. Add, that Mr. *Boyle*, and others give us several Instances of Silver being actually produced in considerable Quantities from *Tin* Ore.

Yet some Naturalists judge the Analogy greater between *Tin* and Lead, and contend that *Tin* is only Lead, under a less Degree of Coction; but if there be some Marks of Agreement between them, there are as many of Disagreement. The Cake of Lead, for Instance, easily fuses and vitrifies, but that of *Tin* not without the utmost Difficulty: If *Tin* and Lead be mixed by a violent Fire, a vehement Colluctation ensues, and both run into a Calx: Add, that *Tin* is easily revived, but Lead with greater Labour.

There are Mines of *Tin* as well as other Metals; the best are in *England*, in the Counties of *Cornwall* and *Devonshire*, from whence the greatest Part of the *Tin* consumed in *Europe* is procured.

The Working of those Mines is very hard and difficult, not only by reason of the great Depth which the Veins descend to, even as low as 60 Fathoms; but also because the Rocks, through which Passages are frequently to be cut, are often so hard, that the Workmen cannot dig a Foot in a Week; nor is the soft shaking Earth found in the *Tin* Mines much less inconvenient to the Workmen, both by reason of the foetid malignant Vapours it exhales, and of the Currents of Water met withal therein: All these Disadvantages render it impracticable for the Workmen to hold it above four Hours together.

The mineral Stone or Ore being dug and drawn out of the Mine, is there broke into Pieces with large Iron Mallets, then brought to a stamping Mill, where it is still pounded smaller with Stampers, much like those of Paper-Mills; and the Water passing through it, washes away the earthy Parts, leaving the metallick ones behind: The Lotion is repeated twice to make the better Separation.

This done, they dry it in a Furnace on Iron Plates, and grind it very fine in a Crasping-Mill, then wash it again and dry it: In this State the metallick Matter is called *black Tin*.

To convert it into *Tin*, i. e. into *white Tin*, they carry it to a Furnace or Blowing-house, where by means of a Charcoal Fire, kept up by huge Bellows worked with Water, it is melted; after it has passed all these Preparations and is become cold, they forget it, which is the last Thing done to it in the Works.

The Dross or Scoria scummed off the *Tin* in Fusion, being melted down with fresh Ore runs into Metal, and even the *Causalty*, i. e. the Matter washed and separated from the Metal in the Mill, being thrown up in Heaps, after resting six or seven Years they fetch it over again, and it yields as good *Tin* as any of that of *Germany*.

The Workmen distinguish several Kinds of *Tin*, as *moor Tin*, which is the best Sort, a Foot whereof weighs 80 Pounds; and *Mine-Tin*, which is the next, a Foot whereof weighing about 52 or 50 Pounds. The *Tin* got from the soft gravelly Earth, they call *Pryan-Tin*, to distinguish it from that got from the Stones, which is better by almost half. Two Pounds of *black Tin* when melted yield about one of *white*.

There is a Curiosity in the Cornish Mines, which the Lovers of natural History will be pleased to hear, and it is this: That in digging at the Depth of 40 or 50 Fathoms,

Fathoms, they frequently meet with large Trees still entire.

Childrey in his *natural History*, goes back as far as the Deluge to place them there; but without having Recourse to so great Antiquity, they who believe that the Mines, when exhausted of their Ore or mineral Matter, renew and fill again in Course of Time, will soon solve the Difficulty by supposing, that in the first working of these Mines those Trees had been let down to serve as Props and Pillars.

But there are other People will think this Renewal of the Mines itself a Difficulty as great as the former: However, what the former Author adds, *viz.* that in some Places in the Mine they likewise find Pick-axes, &c. with wooden Shafts, as also Brass Nails, and even a Medal of *Domitian* seems to countenance the Opinion.

For my Part I find not much Difficulty in the Renewal of the Mines; supposing, as it seems very reasonable, that though the Mines have been exhausted once of their Ore, there remains still in them a sufficient Quantity of the Seed of the same Ore, which being freed of the Obstacle, which the vast Quantity of the Ore already produced, opposed to its Vivification, are thereby at Liberty to receive immediately, or without any Interposition, the Impression of a powerful Agent, which unfolds by Degrees their minutest and most subtle Particles, puts them into Motion, sublimates them from the heterogeneous ones they were enveloped in, and directs them towards their Crystalization, whereby they are rendered susceptible of those Degrees of Perfections, which render them in Time a new and perfect Ore.

To find whether *Tin* be soft and ductile, or harsh and ductile, there are two Kinds of Essays: The first is by putting the *Tin* in a Mould of cast Brass, and there melting it; if the Metal be harsh, it will be taken out heavier than before, otherwise it will be lighter. The second is, by casting the melted *Tin* into a little Mould made of the Thunder-stone. This Mould has a little Canal of moderate Length, which conducts the Matter into a Cavity capable of containing half a Billiard Ball; if the *Tin* be harsh it appears whitish towards the Entry of the Mould, otherwise it is tinged superficially with a very faint bluish Brown.

LEAD, is a coarse, heavy impure Metal, of all others the safest and most fusible when purified.

Those who have made an Analysis of *Lead*, find it to contain a little Mercury, some Sulphur, and a great deal of bituminous Earth.

Lead is found in various Countries, but abounds particularly in *England*; it is found too in several Kinds of Soils and Stones, some whereof besides, contain Gold, some Silver, others *Tin*, &c.

It is melted in a Furnace provided for that Purpose, with a strong Coal-Fire upon it; as it melts it runs thro' a Canal on one Side, leaving the Earth, Stones and Scoria with the Ashes of the Coals. It is purified by skimming it ere cold, and throwing Suet and other fat Bodies into it.

Lead is found of a lighter or deeper Colour, according as it is more or less purified, though some make a Difference in the Colour of the Ore, always esteeming that most which is the whitest.

Some very able Naturalists observe, that the Weight of *Lead* increases either in the open Air, or under Ground. Mr. *Boyle* observes this particularly of the *Lead* of Churches, which, he says, frequently grows both in Bulk and Weight, so as to become too ponderous for the Timber that before sustained it; which some account for from the Impurity, Heterogeneity, and loose Texture of its Parts, by means whereof the Particles of the Air getting Admission within its Pores, are attracted, and easily assimilated to it. But others, who rely wholly on Experience, absolutely deny the Fact, as also that it is produced in Mines before exhausted, by letting them lie long open to the Air, which others assert.

Lead is a Metal of much Use, it easily melts, and mixes with Gold, Silver, and Copper, and communicates its Humidity to them; but not being able to endure the Fire which they undergo, it retires and carries with it all that was heterogeneous in them, so as neither Gold nor Silver are refined without *Lead*. To which may be added, that the coarser Kind of precious Stones boiled in

Lead are thereby rendered much more brilliant.

M. *Glanville* observes, that the Smoak of the *Lead-Works* at *Mendy's* in *Somersetshire*, is a prodigious Annoyance, and subjects both the Workmen and the Cattle that graze about them, to a mortal Disease: The Trees that grow near them have their Tops burnt, and their Leaves and Outfides discoloured and scorched.

When the *Lead Ore* is dug out they beat it small, then wash it clean in a running Stream, and sift it in Iron Rudders. Their Hearth or Furnace is made of Clay or Fire-stone; this they set in the Ground, and on it build their Fire, when they light their Charcoal, continuing it with young oaken Gads blown with Bellows, by Men treading on them. After the Fire is lighted and the Fire-place hot, they throw their *Lead Ore* on the Wood, which melts down into the Furnace, and then with an Iron Ladle they take it out, and upon Sand cast it into what Form they please.

The Mine-men sometimes find the Vein run up into the Roots of Trees, and yet do not observe any Difference between those and other Trees. When the Mine is near the Surface, the Grass is sometimes found yellow. They make no Account of the *Virgula Divinatoria*, yet say, that when a Mine is open, they may guess by it how far the Vein will lead. The Ore runs sometimes in a Vein, sometimes is dispersed in Banks, it lies many Times between Rocks, some of it is harder, others milder; sometimes they have branched Ore in the Spar, about the Ore is Spar and Caulk, and another Substance which they call Crootes.

MERCURY, is an imperfect Metal, neither ductile nor malleable, but only a fluid Matter perfectly resembling Silver in Fusion.

Mercury is known under a great Number of Denominations; the common Name among the Ancients was *Hydrargirum*, q. d. Water of Silver. The Moderns commonly call it *Mercury*, from some supposed Relation it bears to the Planets of that Name. The *French* call it *argent viv*, and the *English*, *Quicksilver*, from its Appearance. Many of the Chymists call it *Proteus*, from the Variety of Forms, Colours, &c. it passes through in their Preparation.

Boerhaave observes, that it is very improperly called a Metal, inasmuch as it has not all the Characters of such a Body, nor scarce any thing in common with the other Metals except Weight, and Similarity of Parts: Thus, for Example, it is neither dissolvable by Fire, malleable, nor fixed: Whence some conclude, that it constitutes a peculiar Class of Fossils, and is rather the Mother or Basis of all Metals, than a Metal itself, but I am of a contrary Opinion, as is plainly seen at the Beginning of this Treatise.

The Characters of *Mercury* are, first, that of all Bodies it is the heaviest after Gold; and still the purer it is the heavier; nay some of the Philosophers even hold, that *Mercury* well purged of all its Sulphur, would be heavier than Gold itself. The ordinary Proportion is, that of fourteen to nineteen: If any Mercury be found to weigh more than according to this Ratio, some imagine, that it may be easily concluded to have Gold in it, which in my Opinion, is a very false Imagination; for that Gold should be in it, either potentially or actually; if they say that it is potentially in it, it cannot make any sensible Alteration in the Weight, since it could be then nothing else but the *Mercury* itself, which they consider as the Seed or Basis of Gold, and susceptible of a new Configuration of Parts, by means of their imaginary Sulphur, which is the true Sense of being something potentially: If on the contrary there was Gold actually in the Mercury, it could be easily discovered from among the rest by its being a fixed Body, without Fluidity: Therefore some *Mercury* exceeding the common Ratio of the Weight, can be attributed to nothing else, at least in my Opinion, but to its greater Degree of Perfection, and to its being better purified of all heterogeneous Particles.

The second Character of *Mercury*, is to be of all Bodies the most fluid, that is its Parts separate, and recede from each other by the smallest Force; nay, we even have in it a plain Demonstration of what I have said in my Treatise of *Mechanicks*, of the subtle Matter being the primary Cause of Motion; of which the mercurial Particles,

Particls, by reason of their perfect Rotundity, are of all Bodies the most susceptible: For being placed on an even and smooth Plane, they are immediately put into Motion, without the least Resistance on their Part; that Particle which receives the first Impulsion, communicating so much of it to the next, without any sensible Loss of it on its Side; that to the next, and thus successively to the last, till every one of them retaining enough Motion, as to move all with an equal Rapidity, till they meet with some heterogeneous Bodies to stop their Course. Consequently of all Bodies *Mercury* is that whose Parts cohere the least, or are the least tenacious; and that therefore of all others the least ductile and malleable. The Parts of Water do not divide so readily as those of Quicksilver, and the Parts of Oil much less: There is a certain Tenacity even in the Parts of Spirit of Wine which resists Separation; but there is scarce any Cohesion at all in the Parts of *Mercury*, unless we chuse to say, that every sensible Particle thereof, is a whole Compound of itself, whose Corpuscles are so closely, or intimately united together, that they are indivisible, which intimate Union causes their perfect Smoothness and Rotundity.

The third Property of *Mercury*, which indeed depends on the second, is, that of all Bodies it is divisible into the minutest Parts, every Part, as observed above, being an entire Body of itself. Thus being exposed to the Fire, it resolves into a Fume scarce perceivable to the Eye; but in whatever Manner it be divided it still retains its Nature, and is the same specifick Fluid. For the Vapours of distilled or volatilized *Mercury* received in Water, or a moist Leather, or the like, become pure *Mercury*; and if *Mercury* be mixed with other Bodies in order to fix it, it is easily separated from them again by Fire, and reducible into pure *Mercury* as before.

The fourth Character is to be extremely volatile, being convertible into Fume, even by a Sand-heat. In effect it does not sustain Fire long enough either to boil or ignite; though it must be added, if the Fire be at first very gentle, and increase by easy Degrees, it may be retained therein a pretty long Time, and be fixed so at length to become ignited in the Crucible, as we learn from some very tedious Experiments made at *Paris*.

The Gilders are but too well acquainted with the Vapours of *Mercury*, which frequently render them epileptick and paralytick, and sometimes salivate them; being of so penetrating a Nature as to take away any scirrhous Tumours, though very apt to reach and destroy the nobler Parts.

The fifth Property is, that it easily and intimately adheres to Gold, less easily to the other Metals, with Difficulty to Copper, and not at all to Iron. Indeed we have heard much among the Adepts about making an Amalgama with *Mercury* and Iron; but the Experiment would never succeed with that industrious Chymist Dr. *Boerhaave*. It is possible, there may be some Way of binding those two Bodies together, and no doubt an Amalgama might be made, if a large Quantity of Gold were added to the Iron: But then if the Compound were beaten into Dust in Water, the Iron would wash away, and the Gold remain. On this Account it is that such as have Occasion to handle Quicksilver, always make Choice of Iron Instruments for that Purpose. We have known Women in a Salivation, to have their Earrings grow white and soft with the Effluvia of the *Mercury*. And hence the Gilders, to lay Gold on any other Body, dissolve it in hot *Mercury*, which done, they apply the Solution on the Body to be gilt, suppose Silver; then setting it over the Coals the *Mercury* flies away, and leaves the Gold adhering like a Crust to the Silver. Lastly, rubbing the Crust with *Lapis Hematites*, the Silver is gilt.

The sixth Character is, that of all Fluids it is the coldest, and the hottest, supposing the Circumstances the same.

Boerhaave shews, that Fire is equally diffused through all Bodies; and that there is in Reality the same Degree thereof in *Mercury* as in Spirit of Wine; and yet if you try with your Finger *Mercury* in the Cold is much colder, and over the same Fire, considerably hotter than this Spirit. This Property depends on the great Weight of *Mercury*; for the Heat and Cold of all Bo-

dies is *cæteris paribus* as their Weights. Now *Mercury* being fourteen Times heavier than Water, if both of them be exposed in a Winter's Night to the same Cold; the *Mercury* must be so much colder than Water, as it is heavier: So also if they be both applied to the same Degree of Heat, while the Water becomes warm, the *Mercury* will be hot enough to burn the Hand.

The seventh Property is, that it is dissoluble by almost all Acids, and unites itself with them, at least with all fossil Acids. Thus it is dissolved in Oil of Vitriol, Spirit of Sulphur *per Campanam*, Spirit of Nitre and Aqua regia.

Only Vinegar does not dissolve it, and hence we are furnished with a Method of detecting the Frauds of Druggists, &c. who make a Practice of sophisticating Quicksilver with Lead. Do but take a Mortar, and pound the *Mercury*, with Vinegar therein; if the Vinegar grow sweetish, it is a Proof there is a Mixture of Lead: If Copper have been mixed with it, the *Mercury* will turn bluish or greenish, if there be no Adulteration, the *Mercury* and Vinegar will both remain as before.

The eighth Property is, that it is the most simple of all Bodies next after Gold; accordingly we find it the same in all its Parts, so far as our Observation goes: If a single Grain of *Mercury* be dissolved in Spirit of Nitre, a proportionable Part of the Grain will be distributed into every minute Particle of the Menstruum; and by diluting the whole with an Ounce of Aqua stygia, the whole Grain of *Mercury* will be revived. Had we the *Mercury* of the Philosophers, called also *vital Mercury*, *Mercury of Metals*, &c. so much talked of; it is asserted it would be still simpler than Gold; for from Gold it is pretended, that sometimes *Mercury*; sometimes Sulphur can be separated; but from pure *Mercury* nothing besides itself can be separated.

The ninth Property of *Mercury* is, not to be in any measure acrid, for it shews no Acrimony to the Taste, nor does it corrode any Body; and if a Carcase were to be buried in Quicksilver, it might doubtless remain there without being any way hurt.

The extraordinary Effects however it produces in the Body, have given People a Notion of its being acrid; but the Case is, that when received into the Blood it acts by its Weight and Velocity; whence it tears and destroys the Vessels, and thus occasions those great Alterations which lead the Chymists into their Mistakes. In effect, all its medicinal Operations are to be accounted for from the Properties already enumerated.

Mercury is found in Mines, the Chief of which are those of *Hungary*, *Spain*, *Friuli*, and *Peru*; the greatest Part of our Quicksilver is brought us from *Friuli*; where there are Abundance of Mines belonging to the Queen of *Hungary*, though mortgaged to the *Dutch*. It is found under three several Forms: 1. In ruddy Glebes or Clods, called *Cinnabar*. 2. In hard stony Glebes, or a mineral Substance of a Saffron, and sometimes a blackish Colour. 3. It is also found pure; for upon opening Holes in the Beds of Stones, &c. there sometimes gushes a Vein or Stream of pure *Mercury*, called *Virgin Mercury*.

This last Sort is most valued; *Paracelsus* and *Basil Valentine* prefer it far to any other Sort, for chymical Operations. Dr. *Brown* assures us in his Travels, that enquiring of one of the Directors of the Quicksilver Mines, wherein the Difference between this and common *Mercury* consisted; he was answered, that *Virgin Mercury* mixed and amalgamated with Gold, renders the Sulphur of the Gold volatile; but this has been tried several Times without Success.

To procure or separate *Mercury* from the Ore or Earth, they first grind the Glebe into Powder; this done they pour a great Quantity of Water upon it, stirring and working the whole briskly about till the Water become exceeding thick and turbid: This Water having stood till it be settled, they pour it off; and supply its Place with fresh, which they stir and work as before: This they repeat, and continue to do; till the Water at length comes away perfectly clear, then all remaining at the Bottom of the Vessel is *Mercury*; and other metalline Matter.

To this *Mercury*, &c. they add the Scoria of Iron, putting them together in large earthen Retorts, and so distilling.

distilling it; by which Means all the heterogeneous, metallick and stony Part is separated therefrom, and the *Mercury* left pure.

As to the *Mercury* in Cinnabar, they do not find it worth while to distil, and yet get it out; Cinnabar selling at so high a Price alone.

The miserable People condemned or hired to work in those Mines, all die in a little Time; they are first affected with Tremors, and proceed to Salivation; then their Teeth drop out, and they are seized with Pains all over, especially in their Bones, which the *Mercury* penetrates, and thus die.

In *Spain* the melting and exhaling of the *Metal*, is performed with more Care, and with an Engine contrived for that Purpose.

As to the earthly Matter wherewith the *Mercury* is mixed, that of *Spain* is red, and speckled with Black and White, and so hard that it is not to be broken up with Gunpowder. In *Hungary* it is frequently a hard Stone, but ordinarily a reddish Earth. In *Friuli* there is a soft Earth where the *Virgin Quicksilver* is found; and a hard Stone which yields the common *Mercury*.

The Mine of *Idica*, one of those belonging to *Friuli*, is so rich, that it yields always half *Quicksilver*, sometimes two Thirds.

The Mine of *Juan Cabelaca* in *Peru*, is still more considerable, the Earth is of a whitish Red, like Bricks half burnt; it is first broke, then exposed to the Fire, by spreading it on a Layer of common Earth, wherewith the Grate of an earthen Surface is covered, under which is lighted a little Fire of an Herb, called by the *Spaniards Icho*; which is of that Necessity in those Works, that the cutting of it is prohibited for the Space of twenty Leagues round. In Proportion as the Mineral heats, the *Mercury* rises volatilized into Smoak; which Smoak finding no Vent through the Capital of the Furnace, which is exactly luted, escapes through a Hole made for the Purpose, communicating with several earthen Cucurbites fitted within one another. The Water at the Bottom of each Cucurbite condensing it to Smoak, the *Quicksilver* precipitates, and is taken up when the Operation is over. In this Process there are three Things remarkable; the first, that the further the Cucurbites are from the Furnace, the more they are filled with *Quicksilver*. The second, that at last they all grow so hot, that they would break, were they not sprinkled from Time to Time with Water. Thirdly, that the Workmen employed never hold it long, but become paralytick, and die hetick. The Precaution they use is, to hold a Piece of Gold in their Mouth, to imbibe the Effluvia, and interrupt their Passage into the

Body. Dr. *Pope* tells us of one he saw in the Mines of *Friuli*, who in half a Year's Time was so impregnated with the Metal, that putting a Piece of Brass in his Mouth, or even rubbing it in his Fingers, it would turn as white as Silver.

The Method of purifying *Mercury* is, by washing it several Times in Vinegar, wherein common Salt hath been dissolved; or by passing and repassing it frequently over a shammy Skin. *Am. Paræus* tells us, that the best Way is to make a Dog swallow a Pound at a Time, and afterwards to separate it from the Excrement, and wash it in Vinegar.

I'll conclude this Treatise, by observing that the common radical Character of *Metals* is, that of all known Bodies they are the heaviest. By Dr. *Halley's* Experiments, the Weight of Gold to that of Glass is determined to be as 9 to 1; and the Weight of Tin the lightest of all Metals to that of Gold, as 7 to 19; which considerably surpasses the Weight of all Stones, Marbles, Gums, and other the most solid Bodies, as appears from the Tubes of specific Gravity: Nor is there any Body in Nature but a *Metal*, that is one Third of the Weight of the Gold.

The Royal Society furnishes us with various Experiments of that Kind. The Weights of the several *Metals* and other Solids, they have examined hydrostatically, by weighing them in Air and in Water; and the Weights of the Fluids by weighing an equal Portion of each: By such Experiments they find, that taking the same Weights of Water and Gold, the Bulk or Magnitude of the former is to the latter as 19636 to 1000; consequently that the Weight of Gold is to Water nearly as 19 to 1.

The specific Gravity of the several *Metals* by this Means determined stands thus:

GOLD	-	-	19636	IRON	-	-	7852
QUICKSILVER	-	-	14019	TIN	-	-	7321
LEAD	-	-	11345	GRANATE	-	-	3978
SILVER	-	-	10535	WATER	-	-	1000
COPPER	-	-	8843	AIR	-	-	1

The Cube Inch of

		Ounces.	Drams.	Grains.
GOLD	weighs	12	2	52
QUICKSILVER		8	6	8
LEAD		7	3	30
SILVER		6	5	28
COPPER		5	6	36
IRON		5	1	24
TIN		4	6	17

METAPHYSICK.

METAPHYSICK, is a speculative Science which treats of the *Ens* in general, and of its Affections, mentally abstracted, especially of spiritual Substances, as far as they can be known by a natural Reason.

1. It can be said a Science, *i. e.* a certain and evident Knowledge of a Thing necessary and immutable by its proper Causes or Ratio's. For what is demonstrated in the metaphysical *Ens* in general, of God and of the human Soul is immutable, and supported with immutable Reasons, as we'll see clearly in the Sequel of this Treatise.

2. It is a certain speculative Knowledge of very general, or most sublime Things, by sublime Principles or Arguments.

The *Metaphysick* is divided into two Parts, *viz.* *Ontology*, and *Pneumatology*.—*Ontology* treats *de ente*, or *Being*, as a *Being*, and of its Affections abstracted by the Mind.—*Pneumatology* treats of Spirits, *viz.* of God, of the human Soul, in a manner conform to our Reason.

ONTOLOGY, which is the first Part of *Metaphysick*, according to my Division, can be called very well a *general Science*, since it exposes the first Notions of the Mind with regard to *Ens*, or *Being* in general, and its

Affections. But to proceed with some Order in this first Part of my *Metaphysick*; I'll speak, 1. *De ente*, or of *Being* in general and of its Affections.—2. Of the Attributes common between the *Being* itself and its Affections.—3. Of the Attributes proper to the *Being* alone.—4. Of the first Notions or Axioms formed of the first Ideas of the *Being* in general, and of its Attributes.

As to Being, and its Affections in general.—Though *Being* is commonly taken in a double Sense, one, *viz.* whereby *Ens* is called a Participle of the present Tense, whereby it signifies, say they, a present and actual Existence, either of the Thing or of the Mode, or is the same as existing: The other whereby it has only the Name, but not the Force of a Participle, and denotes a *Thing* which exists or can exist; it is notwithstanding taken by the Learned, rather in the first than in the last Sense, among whom, *Being*, *Thing*, and *Substance*, have the same Signification. But however, whether some Substance exists actually or not exist, &c. a Violet, a Rose, &c. This Proposition is notwithstanding always true, a *Violet is a Being*, a *Rose is a Being*, or is a *Thing* or *Substance*, since *Ens* very seldom performs the Office of a Participle.

Therefore

Therefore though *Ens* or *Being* taken for a Participle *viz.* as it is the same as existing, and can be adapted as well to Substance as to Manner) be very well defined *that which exist*; *Ens*, notwithstanding taken for a Name, ought not to be defined in that Manner: For *Ens* thus considered, is the same as Thing or Substance, or is that which subsists by itself, as God, an Angel, a Man, a Stone. But the Manner is not a Being or a Thing, but only the Manner or Affection of a Thing, and which is inherent in another, as in a Subject, as Perception, or Remembrance in the Mind, the Figure or Motion in the Body. And thus *Ens* is distinguished from Accident or Manner of Being, in that *Ens* is conceived something without any Regard to the Subject; and Accident or Appendix, or Manner of Being has always some Report to the Subject in which it is inherent, and without which it naturally cannot be.

Hence this Question seems needless, *viz.* whether *Ens* be synonymous or univocal with respect to the Substance and Accident: For as the sole Substance is properly called *Ens* or Thing; the Accident or Manner cannot have the same Appellation; it can never happen, that *Ens* should have the same Signification in both.

Much less will it be univocal with respect to *Ens reale* and *Ens rationis*, especially if *Ens rationis* be taken for a certain Assemblage of two or several dissenting Ideas, as when it is said, that of the Idea of the Soul, and of the Body, is imagined a *corporal Soul*; of the Idea of Stone and Wood, a *wooden Stone*, &c. in which Sense *Ens rationis* is defined an *Impossible known*. For such an Assemblage is a *non ens*, in such a Manner that it can neither be nor conceived, for a *corporal Soul*, a *wooden Stone*, a *square Circle*, a *Stick without two Ends*, and the like, which are commonly brought for Examples in the Schools, can neither be, nor be conceived: For a *square Circle* is not a *Circle*, a *wooden Stone* is not a *Stone*, &c. For that Reason therefore, those Things which are understood repugnant to themselves are judged impossible. Whence if this Question, so common in the Schools be asked, *from what Faculty, Ens rationis, thus defined, proceeds*; whether from the Understanding or from the Will? It is easily answered, from none, since it can neither be, nor be conceived; and tho' the *Stone* and *Wood* be understood separately, a Perception or Idea notwithstanding cannot be composed of them.

Neither is *Ens* synonymous between God and a created Substance; for when we consider *Ens* simply, or the Being itself, we properly conceive nothing else but God; for God is the *Being* itself, but created Substances are not the *Being* itself, but they have a *Being*, or participate of a *Being*; and are no less distant from God in that they are Beings, than either the Image of a Man, or the Shadow of a Tree, differs from a Man or a Tree, in the Ratio either of a Man or of a Tree. This is what the Schools teach when they say, that *God is a Being by Essence*, and the created Substances, *Beings by Participation*. And as he can be participated by the Creatures in infinite Manners, hence it happens, that we divide the Idea of him, first into the Idea of *Being*, which is general, and into the Idea of the *various Manners*, whereby he can be participated by the Creatures, which Manners are called *differentiæ entis*, the Differences of the Being: Wherefore, without some Idea of God, either of a Being simple, or of a Being sovereignly perfect, of an infinite Being, not limited, we have no Idea of a general Being, which is said to be abstracted from all singular Beings: Thus that Idea of a Being in general seems to be nothing else but the Idea of God himself.

Therefore if we place God among the other Beings, or include him in the same Category or Scheme, as we have done in the Logic, and is commonly done in the Schools; we declare that we have done it improperly, *viz.* for some Analogy, which seems to be between God and the Things created, and not because *Ens* is synonymous between God and the Creatures. For we know very well, that the Creatures, if compared to God, are nothing else but the Shadows of Being; and we are only moved by the Reason of a certain Analogy, when we said, that *Ens* in general is common both to the Being by Essence and uncreated, and to the Being by Participation and created.

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Ens therefore, considered in general, is defined, *that which subsists by itself*, and is divided into Spirit and Body. Spirit, is either God or an Angel, or the human Soul; but in an *analogical*, not *synonymous* Manner. And Body is either without Life, as Heaven, the Earth, &c. or has Life; and again, either has not the Faculty of walking, as a Plant; or has that Faculty and is called Animal, which is either destitute of Reason as a Brute, or is endued with Reason as Man.

Therefore there can be distinguished three Kinds of Beings, or of Substances, or of Things. For some Beings are entirely spiritual, as God, and the Angels; some entirely corporal, as the Air, the Earth, Wood, &c. Between these two Kinds there is a third, which participates of the Nature of both, *viz.* Man, who consists of Soul and Body.

All these have their essential Attributes, without which they can neither exist, nor be understood; *viz.* Gender, Species, and Difference; *v. gr.* God is not only a Spirit, not only a Substance, or Being, which are his generical Attributes, but is also sovereignly perfect, *i. e.* very just, very potent, &c. which are the Differences, without which a Being cannot be entirely perfect. Likewise, an Angel is a Spirit, a Substance, or Being; as Wood is a Body, a Substance, a Thing, the generical Attributes of both; but they have besides their peculiar Differences, pertaining to the particular Nature of each Substance; for an Angel is spiritual, intelligent, &c. and Wood is corporal, extended, &c.

These essential Attributes are commonly called in the Schools, *Gradus Metaphysici*, metaphysical Degrees: Of those Degrees, some are *superior*, *i. e.* more general and common; and others *inferior*, and contained under the superior. For there are more Beings than Bodies; since Body is contained under Being, as under Body are comprehended Wood, Stone, &c. under Stone, Marble, Flint, &c. So that by those Degrees an Ascent is made, from the lowest Species to the supreme Gender; and a Descent from the supreme Gender to the lowest Species.

They are called *Metaphysical*, because they are abstracted by the Mind; for all is called *Metaphysical*, which is either spiritual of its Nature, or which the Mind abstracts from the Matter.

It is asked in the Schools, whether those Degrees or Attributes in the same Individual, are in Fact distinguished between themselves, and from that Individual?

I answer, 1. That the metaphysical Degrees of Things purely spiritual, or purely corporal, are neither distinguished mutually between themselves, nor from the Individuals. For in God, *v. gr.* the Divinity, Wisdom, Omnipotence, and other essential Attributes, are neither distinguished between themselves, nor from God: Likewise in Wood the Lignicity, (if I may use that Term) the Corporeity, and the Substance of Wood, are nothing else but the Wood itself, considered in a different Manner, by the Mind.

I answer, 2. That in Man, who is in Part spiritual, and in Part corporal, the corporal Degrees are, in fact, distinguished from the spiritual. For the Corporeity, Extension, Solidity, and the rest of the corporal Attributes, are entirely distinct from Rationality, Spirituality, Liberty, &c. though the whole Man is denominated corporal or extended, as well as spiritual, and free; because the Denomination is of the *whole*; but notwithstanding his Body is not spiritual, nor his Mind corporal.

But if there be Attributes which include the Body and the Mind, they are not distinguished from the whole; *v. gr.* the Humanity is nothing else but the Body and the Soul, as they are joined together, and constitute a whole; for the Body alone, or the Soul alone, cannot be called Humanity; but the Body and the Soul united together form a Man.

Therefore, when God is called a *perfect Being*; or when the Spirit or the Mind is called a *thinking Substance*; certainly, in those Definitions, the Gender and the Differences are not distinguished between themselves, but are one and the same Thing considered in a different Manner. For God can be considered either as a *Being*, and in that Sense he agrees, at least *analogically*, with all the other *Beings* he has produced; or as a *perfect Being*, whereby he differs from all others; therefore that Sort of Composition of the Gender and Difference,

is *metaphysical* only, and proceeds from the Narrowness of our Mind, inasmuch as a finite Mind must consider the different Faces, or Manners, or Relations, or Attributes of the same Thing, to know that Thing more distinctly, and with less Difficulty. Even a *simple Being*, cannot be without that Sort of Composition, if I dare call it thus: For he is a *Being*, which is his Gender; and he is *simple*, which is his Difference.

But in Man who is composed of Parts of a different Order, the Gender and the Difference are separated by a real Distinction; for as he is commonly defined a *rational Animal*, his Gender, whereby he agrees with the Brutes, is the *Animality*; and the Difference whereby he differs from them, is the *Rationality*: Animality and Rationality are really distinguished, for they are the same Thing, and Parts really distinct, *viz.* the Body and Soul. Therefore the Animality, which is the Principle of the animal Functions, and which univocally is convenient to Men and Brutes, is nothing else but the organical Body, as by Means of the animal Spirits it can discharge the Functions common to Men and Beasts: For if Animality should include the Soul, it would not be common to Beasts. — *Rationality*, is the Principle of Reasoning, or the Soul itself, which perceives, judges, reasons, and disposes; and which is independant from the Body in its Thought, that it often takes the Occasion of Thinking from corporal Motions.

From these we may infer what we are to think of that Dispute subsisting between the *Thomists* and *Scotists*, and which was invented by the antient Sophists, *viz.* whether there are universal Natures in Things, as the *Scotists* imagine; or in the Soul only, as the *Thomists* pretend.

It is certain, 1. That there is no universal Nature in Things, or which is one in several, and proper to be predicated of them, as the *Scotists* define it. For the generical Nature, as *Animality*, considered either in *Peter* or *Paul*, is not distinguished from the organical and animated Body either of *Peter* or *Paul*; and therefore does not exist one and the same in both, or in other Men. Likewise the specifick Nature or *Humanity* in *Peter*, is the Body and Soul of *Peter*; in *Paul*, the Body and Soul of *Paul*; but the Body and Soul of *Peter* are not the same Thing with the Body and Soul of *Paul*; and when *Peter* is said to be a *Man*, and *Paul* a *Man*, the same Man is not enounced of both, but of one and of another. Therefore there is no universal Nature in Things.

2. Neither are we to admit an universal Nature, *per se*, at least in the Sense it is admitted by the *Thomists*. For they call universal Nature, that which is apt to be in several, and to be attributed to them; such as there is none in the Mind. For that pretended Nature is nothing but an objective Idea; but an objective Idea is not apt to be in several, or to be predicated of them; but only to exhibit several Things, *viz.* several Species, if it be a generical Idea; or several Individuals, if it be a specifick Nature: Therefore an universal Nature in *essendo* & *predicando*, as the Scholasticks express themselves, consists neither in the Things themselves, nor in our Mind.

Therefore, when *Peter* and *Paul* are said to be of the same Species, the Sense is not that there is a common Nature in them; but a semblable Nature, which agree with the same Original, or with the divine Idea. This Similitude of Nature cannot be called Unity, unless perhaps the Name of *Unity* be taken improperly, as it often happens, for *Similitude*; and those Things are said to be of the same Nature, which are only semblable.

Now we can easily judge of the Impropriety of such an Union, from that, in that Sense, an Angel and a Stone could be called one, not in the *Specie*, but in the *Gender*; because they agree in the general Idea of Substance, as in an Original; and have the same, i. e. a semblable generical Nature.

Some may ask, perhaps, if nothing in Nature can be called universal?

To which I answer, that there are three Universals; *viz.* God in operating, because he operates all Things in all Things: The Idea in representing, because it represents a World of Things; and lastly, the common Name in signifying, because it signifies a World of

Things: We know no Universal but these; and therefore, if the Gender, Specie, or other Attributes are said to agree with several; that is only true, in that those Attributes are represented by a general Idea common to several, and expressed by a common Name. For though an Idea be particular in our Mind, it can notwithstanding represent several Things: *v. gr.* the Idea of a Circle represents several Circles; the Idea of a Man, all Men, &c. Likewise it is manifest, that the universal Attributes are expressed by a common Name.

What we have said, already, of the Attributes essential to each Substance, or Being, *viz.* the Gender, Species, and Difference, is to be understood of the Manner of Being, or of the Accident; for every Mode, whether spiritual or corporal, is either of the same Species with another Mode, as two Remembrances, or two Rotundities; or of a different Species: And again, or of the same Gender, as Rotundity and Quadrature, which agree in the same Gender, *viz.* in Figure; or of a different Gender, as Rotundity and Remembrance: So that there of whatever Mode or Accident can be affirmed, is Gender, Species, and Difference: For Quadrature, *v. gr.* is first called Figure, then Mode; likewise Remembrance is called Cogitation, afterwards Mode. Recollection, or Remembrance, is called, besides, Spiritual, and Rotundity, Corporal; which are the Differences of both.

From this I'll pass to the Attributes common both to the Being, and to its Mode.

The ATTRIBUTES, which are common both to the Being itself, and to every one of its Modes, are called, in the Schools, *transcendent*; as transcending all the Genders, or Categories, as well of the Being itself, or Substance, as of every Accident or Mode; and are not like the mental Attributes, contained in one Category rather than in another. For the Attribute essential to every Substance, *viz.* its Gender, Species, or Difference, are not found rambling out of the Category of the Substance. The Attributes of any Mode, *v. gr.* of Motion, or Figure, are always found in the Category of that Mode.

Essence notwithstanding, taken in general, or the Name or Notion of *Essence*, is agreeable both to Substance and Accident; for it is said, the *Essence* of a Thing or Substance; and the *Essence* of a Mode or Accident: Whence, as the Names of *Gender*, *Species*, &c. can be called *transcendent*, likewise the Name of *Essence*, or *Essence* in general, can be called a *Transcendent* Term or Attribute. And *Existence* is said of the Being, and of the Mode of the Being.

ESSENCE, is the same as the Nature of a Thing, and is defined, *that which the Thing is*, or *that which is first conceived in Thing*, or *what is answered to the Question, what the Thing is*, *v. g.* if I be asked what Man is? I'll answer, that he is a Substance consisting of Soul and Body, physically united.

EXISTENCE, is *that whereby a Thing is actually*, *v. g.* Man by his *Existence*, is said to be extant actually in Things..

Both pertain to *Entity*, which *Entity* is the Reality of the Being, or, is the Substance of the Thing, or the Thing itself.

Those three Things, *Entity*, *Essence*, and *Existence*, are one and the same Thing, but considered in a different Manner, *v. gr.* the *Entity* or Substance, or Reality of a Man, is his Soul and Body: His *Essence* is also contained in his Body and Soul; and his *Existence* is nothing else but the same Man as existing: Or is the Body and Soul which, joined together, exist. But *Singularity*, whereby something is understood singular and individual, is not to be distinguished, in fact, from *Existence*: For *Singularity* is nothing else, but the Thing or Substance, or Entity, which, as existing, is that numerically, not another; as if it be Question of the Mode of the Being, it is the Mode itself, which, as existing, is singular.

All those Things notwithstanding are distinguished thus, that the *Essence* of a Thing, or of a Mode, is that, without which the Mode or Thing cannot be, nor conceived, or some Species. Whence while that Thing or Species remains, the *Essence* thereof is immutable: For as a Number, by the Addition or Subtraction of

an Unity is not the same; likewise Essence, if you add something to it, or take something from it, does not remain the same. Therefore Aristotle, lib. 8. *Metaphys.* c. 3. says, that Essences are semblable to Numbers. But *Entity* can be changed, and notwithstanding remain the same; for, v. gr. though Fruit be rotten, its whole Entity remains; for it neither perishes nor is annihilated, but is only rotten, and assume new Forms.

Therefore, if Existence be compared with Essence or some Specie, because that Essence or Species can perish, the Existence thereof perishes, viz. when that Species is destroy'd: But if Existence be compared with Entity, as Entity cannot naturally perish, the Existence of the Entity remains, which is nothing else but the Entity itself existing, v. g. the Entity of Wood, whether it be burnt and dissolved into Smoak and Ashes, or be changed again into Earth, or perhaps into a Tree, it always exists, and cannot perish, or return into its former Nothing, unless it be by the omnipotent Will of him, who has produced it from nothing.

What we say, that the Essences of Things are immutable, must be understood of Essences or Species, metaphysically considered, viz. in that they must be necessarily contained in a certain Gender, and a certain Difference; but not of physical and sensible Species, which being formed of the Assemblage of Accidents, do not consist in the Indivisible, so as to not admit a slight Mutation in the Accident, without being destroy'd themselves: For a small Quantity of Wine mixed with a great Quantity of Water do not lose its Species. Thus white Wine differs in the Texture of the Parts from red; though the Essence of Wine remains untouched in both Sorts of Wine. Whence the Loss of some Parts, viz. of an Eye, of an Ear, does not hinder our Body from remaining a human Body.

Essence and Existence are between themselves as the Power and the Act.

We call Power, in this Place, not the Faculty of acting, but the Capacity of receiving something. Whence whatever is perfected by another, either in Reality, or per mentem, in our Manner of conceiving, that is said in the Power with respect to it, as Essence is in the Power with respect to Existence; Entity with respect to Mode; Gender with respect to Difference; Matter with respect to Form; because Essence is said to be perfected by Existence, Entity by Mode, Gender by Difference, Matter by Form.

Therefore Act is the Perfection or Accomplishment of a Thing; as Existence is the Perfection and Act of the Essence; Difference the Perfection of the Gender; Form of the Matter.—There are two Sorts of Acts, viz. the metaphysick Act, and the physick.

The metaphysick Act, is that which only determines the Subject, but not affects it physically; such is Spirituality, or Rationality with respect to the Soul, Humanity with respect to Man: And this Act is not really distinguished from its Power or Subject, which it is understood to perfect.

The physical Act, affects the Subject physically; as the Thought affects the Mind, and Figure the Body. Whence a physical Mode can be called a physical Act, with respect to the Entity or Subject, of which it is a Mode.

There are, also, two Sorts of this physical Act; one called first, viz. the Power of Acting, Suffering, or Receiving, as the Will and the Understanding; the other second, viz. Action, or Passion, or Modification, v. g. to will, to understand; or, as they speak, Volition, and Understanding. But as all those Acts are imperfect, and can be perfected, one is a most perfect Act, which can receive no Addition of Perfection, viz. God, who for that Reason is commonly called a very pure Act.

All those Attributes are common both to the Being itself, and to the Accident. For the Accident, as well as the Substance, has its Essence, Existence, and Singularity; and that Singularity is taken, as well in the Substance as in the Accident, from the Existence: For a Thought, or a Rotundity, is one and singular as Existing: But if a Thought be rejected and re-assumed again, or if a Rotundity is taken from Wax, for Example, and restored to it again, it will not be the same Thought nor the same Rotundity. Therefore there is no other Principle of Individuation, as they call it, or of Singu-

larity, than the Existence of the Thing, or of the Mode. For a Thing or a Mode cannot exist without being singular.

But besides the Essence, Existence, Entity, and Singularity, there are other transcendent Attributes, or which are common both to the Substance and to the Accident; viz. Unity, Truth, Goodness, Duration, Order, Relation; or Habit, Proportion, Opposition, and the like.

Unity is a transcendent Attribute, whereby the Substance or the Accident is to be one, i. e. undivided in itself, and separated from all others. Unity is defined in the Schools an Undivision of the Thing in itself, and a Division from all other Things.

Distinction is contrary to Unity, by which Distinction Things are understood not to be one and the same Thing: Whence Distinction is commonly defined, the Negation of Identity.

There is this Difference between Distinction and Division, that all the Things which are divided or separated are distinct; but all the Things which are distinct, are not divided or separated: For, v. g. the two Middles of a Globe are distinct, though they be not divided. Some Things can likewise be divided, which are not different; as Peter and Paul are divided or separated, though they be not different, because they have semblable, not different Natures. But Peter and Bucephalus are together distinct, divided and different.

Two Kinds of Distinction are admitted in the Schools, viz. a real Distinction, and a Distinction of Reason.

The Distinction of Reason, is that which the Mind imagines, in Things which are not distinct in Fact. And this is likewise of two Sorts, viz. Distinction of Reason, Reasoning, v. gr. which is imagined without any Foundation in the Thing, such as that which is said to be between Marcus Tullius and Cicero; and Distinction of Reason ratiocinated, which is with some Foundation; such is that between the Thing and its Attributes, or between the Attributes themselves, v. g. between God's Justice and Mercy, which for their various Effects are the Subjects of different Conceptions, and that with a just Foundation; or between Manner and Paternity, or Similitude, or Equality, or other Habit or Relation he has to another.

The same Distinction is called, in the Schools, virtual; because by it one Thing is conceived to be virtually equivalent to another; v. gr. the same Heat is equivalent to the Virtue of hardening and softening, because it hardens Clay, and softens Wax. The same is to be understood of the Mercy and Justice, and God's other Attributes. Likewise of the Understanding and Will of our Soul.

But because the Attributes of a Thing, are some Formalities, or Perfections, or Acts: Scotus has called formal that Distinction, which is between the Attributes of a Thing; and differed from all other Philosophers, in that he imagined that those Formalities, viz. Justice, and Mercy in God, were actually distinguished between themselves; not as Things but as Formalities, i. e. as Attributes or Perfections; which however does not seem true, for God's Justice and Mercy are, in fact, God himself. Whence we admit, likewise, a formal Distinction between those Attributes; not an actual one, but virtual only, viz. with respect to their different Effects.

Des Cartes, in his Answers to the first Objections, against his metaphysick Meditations, is of Opinion, that the formal Distinction should be confounded with the modal; but he separates entirely the modal from the real. For formal, or virtual, or modal Distinction, seems to be the same, in his Sentiment, as the Distinction of Reason; which however he has a little reformed in the first Part of his Principles, num. 42.

Real Distinction, is that whereby several Things are actually one and the same Thing; and is commonly subdivided into greater real Distinction, and into lesser.

The greater real Distinction, can be considered either in God, or in the Things created. In God, it is said to be between those Things which are mutually referred to themselves, viz. between the Persons of the Blessed Trinity. And in Things created, it occurs between Things which are either separated, as between two Globes; or can be separated, as between the two Middles of the same Globe. Some Things can be divided or separated by

by a certain Argument, when one of them can be conceived in such a Manner, that the Idea of that one *positively* and compleatly excludes the Idea of another; as because the Idea of the Soul removes from itself, *positively* and *compleatly*, the Idea of a Body, and *vicissim*; we say, that the Body can be separated from the Soul, and *vicissim*.

I omit to speak of the *adequate* Distinction, whereby two Wholes, as *Peter* and *Paul*; and of the *inadequate* Distinction, whereby a Whole and its Part, *v. g.* *Peter*, and *Peter's* Soul, are said to be distinguished; for as those Sorts of Distinctions are not of much Consequence, they want no great Explication.

The *lesser real Distinction*, or *Modal*, is that which is between a Thing and its Mode or Accident, as between the Finger and its Inflexion.

The *transcendent* and *metaphysick Truth*, of which we treat in this Place, is a transcendent Attribute, whereby a Thing, or the Mode of a Thing, is conform to its Prototype, or to the divine Idea; it differs from the Truth of Idea, or Judgment, or Sign. Therefore a Thing is called *true*, which is conform to its Original; *v. gr.* Good is called *true*, where it is conform to the divine Idea; for then it has the true Nature of Good, *viz.* such as is conceived by the divine Mind.

All Being, or Accident of Being, is true; and none is false but with respect to us: *v. gr.* Bath-Metal is true Bath-Metal; but with respect to us it is called false Gold; inasmuch as by its outward Appearance it appears Gold, and induces us to pronounce a false Judgment.

Transcendent and *metaphysical Goodness*, is the *Perfection of the Thing or of the Accident*; or a *transcendent Attribute*, whereby any Thing is called perfect in its Kind. This Goodness differs from a *moral* Goodness, or from Probity which deserves Praises, of which I have treated in *Ethicks*. *Metaphysical Goodness* consists in that all Being is either of God, who is essentially Good, *i. e.* sovereignly perfect; or is come from God, and is only good by Participation. The Mode of a Being is good, likewise, when it is as perfect as it can be.

Duration, is an Attribute, whereby a Being, or the Manner of a Being, is said to persevere in its Being; and that if it has neither Beginning nor End, and exists all together, belongs only to God, and is called *Eternity*, of which hereafter: If it has a Beginning, but is to have no End, it pertains to Angels, and perhaps to the Universality of this aspectable World: Lastly, if it has a Beginning and an End, it is to be attributed to corporal, composed, and corruptible Things, and is called *Time*.

Order, is an Attribute common both to the Substance and to the Accident, whereby some Things are conceived prior, others posterior; some antecedent, others subsequent, others placed together: Some Things, however, if we believe the Schools, can be prior and posterior, or placed all together in five different Manners.

1. Something is placed before another, of a Priority of Time or Duration, as *Adam* was Prior to *Abel*, *David* to *Solomon*. — 2. Something is said to be before another of a Priority of Nature, when it can be inferred from it: In which Sense, the Gender is before the Species; for if something, *v. gr.* be a Circle, it can be very well inferred, then it is a Figure; but not *vicissim*. — 3. A Thing is said prior to another, in *Order* or *Position*: As in a Discourse, the Exordium is before the Narration. — 4. In *Honour*: In which Sense a Master is before a Servant, a King before a Soldier, &c. — 5. The *effective Cause*, by that Name is prior to its Effect, not only in Time; but likewise in Nature, Honour, and Order: Because there is nothing in the Effect, which does not proceed from the Cause. All which is expressed in the following Verses:

*Tempore, naturâ, prius ordine, dic & honore:
Causaque causato dicitur esse prior.*

Relation, likewise, is a transcendent Attribute, or common to all Beings and Modes: And is commonly defined *Order*, or *Respect*, or the *Habit of one to the other*; *i. e.* or of a Thing to a Thing, or to an Accident: Or of an Accident to an Accident, or to a Thing; one is *essential*, the other *accidental*. For I don't treat

in this Place of the divine Relations, which are subsistent, and not distinguished from the divine Persons.

I call *essential Relation*, that without which a Thing, or an Accident can neither exist nor be conceived, *v. g.* the Relation of a created Substance to the Creator is essential, because a created Substance is by its Nature a dependant Being, a Being by Participation proceeding from the supreme Being. Likewise the Relation of an Accident to its Subject, is essential to that Accident: For an Accident, whether it be spiritual as a Thought, or corporal as Motion, Rest, &c. can never be understood without some Report to its Subject; because the Accident regards the Subject: Whence *Relation* is also called *Connotation*.

There are even some Accidents, which have not only an essential Relation to the Subject, but likewise to something outward; as Science has not only a Report to the Subject in which it is, but likewise to the Object which can be learned. And if we want Terms to express the *Reciprocation* of Relation, we must invent some, according to *Aristotle's* Advice, *c. de relat. in categor.* where he says, that *Head* is not of an Animal, but a *headed*; *Wing*, not of a Bird, but of a *winged*, &c.

Accidental Relation, is that which happens either to the Being or to the Accident, because of something accidental, and without which that Being or Accident can be absolutely understood. Therefore, in those Sorts of Relations, three Things are commonly distinguished in the Schools, *viz.* the *Subject*, which is referred to another, the Term to which the Relation is made; and the *Foundation* or Reason for which the Subject is related to the Term, *v. gr.* *Socrates* is related to *Plato* by reason of the Philosophy, which is common to both, and *vicissim*. A Father is related to his Son, whom he has begotten, though it was in his Power not to beget him, &c.

Those Things which are referred to themselves are called *related*, or rather *cor-related*; because a Relation is always mutual and reciprocal. Whence the Related are commonly said to be both by *Nature* and *Cognition*; because one is collected from the other, and *vicissim*: *v. gr.* If there be a Father, there must necessarily be a Son; if there be a Master, there must be a Servant, &c. and these have either the same Name; as *semblable*, is said *semblable* to a *semblable*; *equal*, *equal* to an *equal*, &c. or have a different Denomination; as a Father is said the Father of a Son, the Master of a Servant; the Cause of the Effect, &c.

The *Foundations* of Relations are taken from all the Categories; *i. e.* from the Substance and all the Modes, as well spiritual as corporal.

Therefore the Relations of *Conveniency* are founded in the Substance; those of Difference in the Nature; *v. g.* two Cherubims, two Arch-Angels, two Men, two Lyons, have between them a Conveniency, or Similitude in the Substance; a Cherubim and an Arch-Angel, a Man and a Lyon, have a Dissimilitude in Nature.

Relations of *Equality* and *Inequality*, are founded in Quantity; for an Equal is equal to another Equal; and an Inequal is either greater or less than the other.

To this pertains the Relation of a Whole to its Part, of the containing to the Thing contained, of the Place to the Thing located, and *vicissim*: Because the Whole is greater than its Part; the containing than the Thing contained; the Place than the Thing located or placed.

The accidental Relation of *Similitude* and *Dissimilitude*, is founded in the Quality, because the Name of Quality includes all the Modes or Accidents. Thus *Plato* is related to *Aristotle* by reason of the Philosophy, which is a spiritual Quality; an *Æthiopian* to an *Æthiopian*, for the Blackness, which is common to both, and which is a corporal Quality.

Other Relations are founded in the Relation itself: *v. gr.* Paternity, which is the Relation of the Father to the Son, is a legitimate Cause, why a Father is related to another Father; because both agree in Paternity.

The Relations of the Causes to the Effects, and of the Effects to the Causes, are found in the Action and Passion. Where the Name of Cause is to be taken in a wider Sense, for all that which either produces a Thing, as God with Respect to the Creatures; or which procures us the Knowledge of a Thing, as Sign with Respect to the

the Thing signified; the Premises with Respect to the Conclusion, &c.

In *Ubi*, or Place, are found the Relations of *Vicinity*, *Distance*, &c.

In *Quando*, or Time, the Relations of *Age*, viz. of *Infancy*, *Youth*, &c. have their Foundation.

Lastly, in *Habit*, and all Adjacents, possessed, retained, &c. are founded the different Relations of Men of the Gown, of military Men, of Riches, &c.

From the Relation, *Habitude*, or Comparison of one Thing to another, follows *Proportion*, which is an *Equality of those Reasons, or Comparisons*; of which I have treated in my *Treatise of Geometry*.

Opposition is the Dissonance of two Beings or Accidents, whereby they are particularly contrary to one another.

We distinguish, in the Schools, four Kinds of *Opposites*.

The first are the *Correlatives*, which are mutually related to one another.—The second, the *Contraries*, which placed under the same Gender of Quality, are very distant from one another. I say, *under the same Kind of Quality*, for the Substance, if we believe *Aristotle*, has nothing contrary, by Reason of itself, nor by Reason of Quantity; but only by Reason of the Qualities it is affected with; though not for all, for Quality seems to contain in itself all the Modes or Accidents; but only by Reason of some, which, according to the Doctrine of the Schools, must be positive on every Part, as *Virtue* and *Vice*. Though *Contrariety* taken in a wider Sense, signifies the same as *Opposition*: And those Things called *Opposite* in the Schools, are called *Contraries* by *Cicero*, in *Topic*.—The third, the *Privatives*, which are the Form or Habit, and its Privation. And which, taken in a wide Sense, can be called *Contraries*, according to the same *Cicero*. Such are Sight and Blindness, Day and Night, &c.

We must observe, 1. That *Privation* is commonly defined, *the Absence of the Form or Habit in a Subject, apt to be informed by such an Habit or Form*: In which it differs from *Negation*, which is defined *the Absence of the Form in a Subject inapt to receive that Form*. For Example, the Absence of Light in a Man, is called *Privation*, in a Stone, *Negation*; because a Man is born apt to see; but not a Stone. Likewise, the Absence of a Knowledge which one should have acquired, is called *Ignorance of Privation*: But if we are not obliged to have that Knowledge, it is called *Ignorance of mere Negation*. Therefore the Verb *to be deprived*, is taken in almost the same Manner in the Schools, as *to want* by *Cicero*, lib. 1. *Tuscul. quest.*

2. That what is taken in the Schools as an Axiom, is not generally true, viz. that *from the Privation to the Habit there is no Regress*. For Example, though there be no Regress from Blindness to Sight, in him whose Eyes have been pulled out, or is afflicted with a *Glaucoma*, which is produced in the Crystalline of the Eye; there can, notwithstanding, be a Regress, if the Blindness proceeds from a *Cataract*.

Lastly, those are called *Contradictories*, which differ, as a Being, and no Being, v. g. a Man, no Man.

Of all Kinds of Oppositions, the greatest are the *Contradictories*. For *Contradictories* are neither semblable nor equal: Neither do they agree in the Subject, as the Form and Privation, which are successively received in the same Subject; nor in the Gender, as the Contraries, which are placed under the same Gender of Quality. Whence the *Contradictories* differ among themselves in such a Manner, that if one be, the other cannot possibly be; since there is no Medium between them.

For there are some Extremes, between which there is a Medium, either by *Participation*, or by *Exclusion of the Extremes*, v. gr. the Flower of the Age, is a Medium by Participation between Youth and old Age; because it participates of the Strength of the one, and of the Prudence of the other: Man is a Medium by Participation, between the Things spiritual, and the corporal; because he participates of the one and the other Nature. But *Vice*, by the Exclusion of both, according to *Horace*, *Epist. 18. lib. 1.*

Virtus est medium vitiorum & utrimque reductum.

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But between *to be*, and *not be*, there is no Medium, neither by Participation, nor by Exclusion; though between a *Being* and *Nothing*, there is some Medium, viz. the *Mode of the Being*, which is neither a *Being* nor *Nothing*.

Therefore a *Being* and *Nothing*, are not, strictly speaking, *Contradictories*. Because *Contradiction*, is the same Thing affirming or denying the same Thing, according to all the same Things. But *Nothing* is not a Negation of the *Being* alone; but likewise of the *Mode of the Being*. And thus a *Being*, and *no Being*; or the *Mode of the Being*, and *not the Mode of the Being*, is the same Thing affirming, and denying the same Thing, according to all the same Things; but *Being* and *Nothing* are not so; because *Nothing* denies more, than *Being* affirms; since *Nothing* does not only deny a *Being*, but likewise the *Mode of a Being*.

The next Things which falls under our Consideration are: *The Attributes proper to the sole Being or Substance*.

SUBSTANCE, is called a *Being subsisting of itself*, or only *Being*. For all that does not subsist of itself, is not properly a *Being*, but only the *Mode*, or *Appendix of a Being*.

Substance, is either a Part of another, as the Head, the Arms, and all the other Members, are Parts of the human Body; and the Body itself is Part of the Man; or a certain and compleat whole: Again, it is that Complement, either in the Ratio of *Nature*, or in that of *Essence* only; or has it in the Ratio of a *Suppositum*, or of a *Person*; which Complement is called by the Theologians, *Substance*, or *Hypostasis*. All which must be explained in a clear Manner; since on that Explanation depends that of the principal Mysteries of the Christian Religion, viz. of that of the Trinity, and of the Incarnation.

Therefore HYPOSTASIS, according to *Boetius*, lib. de person, & natur. c. 3. signifies nothing else among the antient profane Writers, but a singular Substance, which they would not distinguish either really, or per mentem, from Nature itself; but the ecclesiastical Writers, to defend the sound Doctrine received by the Fathers, relating to the Mysteries of the Trinity, and of the Incarnation, have distinguished the Nature and Substance, from *Hypostasis*, and have called *Hypostasis* by the Name of *Subsistence*, or *Suppositum*.

Therefore, *Subsistence*, according to the Energy of the Expression, seems to signify nothing else than the Manner, whereby every Substance, either compleat, as a Man, or incompleat as the Head, exists. Whence *Subsistence* is defined, *the last Complement of a Substance, which renders it of its own Right; or incommunicable to another, as to a Suppositum*.

SUPPOSITUM, is a singular Substance, entirely compleat, and of its own Right. That is called a Substance entirely compleat, of its own Right, and incommunicable to another, as to a Supposite, which is the entire Principle of its Affections, or Operations, if it has any. As *Socrates* is a *Suppositum*, and not his Soul alone, or his Body alone: Because *Socrates* is the whole and entire Principle of his Operations. A *Suppositum*, if it be indued with Reason, will be called a *Person*.

A *Person*, according to *Boetius*, lib. de person. & natur. c. 3. is the individual Substance of a rational Nature. For, says he, we say the Person of a Man, of God, of an Angel; not of a Tree, nor of a Horse; because God, an Angel, and a Man are rational, or thinking Natures. Therefore Person and Suppositum differ in that all Person can be called Suppositum, not vicissim.

We call a *Whole*, that which is of its own Right; and this is either simple and has no Parts, as God, and an Angel; or has Parts, as Man, and all Things corporal. That which has Parts, is called in the Schools, either an *actual* and singular whole, or *universal* and *potential*.

We call *actual Whole*, that which has Parts in itself; which Parts are either *essential*, viz. when without them, a Whole can never be, nor conceived, such are the Soul and the Body with Regard to Man; or are *integral*, *integrant*, or *entitative*, such are the Head, the Neck, &c. with Respect to Man.

We call *potential* or *universal Whole*, that which has Parts under itself. As the Gender has Species under itself;

itself; and the Species has Individuals; which Parts are called *subjective*, or *inferior*.

A singular Substance, whether it be a Whole, or a Part, does not only subsist by itself; but is likewise the Subject of all the Accidents or Modes.

There are different Sorts of Subjects. The first is called a Subject of *Inhesion*, in which the Accident is inherent; which first Subject is either remote, or which, or nearest, or whereby. The Suppositum *which*, is that which receives the Accident, by Means of another; as Man receives the Philosophy by Means of his Understanding. And the Subject *whereby*, is that whereby the Accident is received immediately; as the Understanding with Respect to Philosophy.

The second is the Subject of *Denomination*, viz. which is denominated from some Form or Perfection, Defect, Action, or Affection: As Man is denominated a Philosopher from Philosophy; blind from Blindness; acting from Action: For the *Denominations are of Supposites*; though the Form, Perfection, or Defect, from which proceeds the Denomination, be only in some Part of the Supposite; as Philosophy is in the Mind; Blindness in the Eye, and not in the whole Man: As likewise Locution, which is a certain Action, pertains only to some, and not to all the Parts of the Body. Sometimes that Denomination is called *extrinsic*, when taken from something extrinsic, v. gr. a Wall is called Sight, from Man's Vision, which is extrinsic to a Wall.

The third is called Subject of *Information*, viz. into which is received some substantial or essential Form, whereby it is informed to constitute some physical Whole; v. gr. the human Body is commonly called *Subject of Information*, with Respect to a rational Soul, whereby it is perfected to form Man of both Substances, as of a double essential Part. Therefore the rational Soul is called the *informing* Form of the human Body, because united to it essentially, and by the Destination of the Creator.

The fourth Kind of Subject, is called *Subject of Attribution*, viz. a Matter subject to some Discipline, to which are attributed all the Things treated in that Discipline. Otherwise it is called in the Schools, *material Object*, or the whole Object, or *total*, viz. if it be join'd with the formal Object.

Of *Substances*, besides, some are called *Causes*, and other *Effects*.

CAUSE is commonly defined in our Schools, a *Principle influencing a Being into another*, i. e. into another Nature. Among us all Cause is a Principle, but all Principles are not Causes. It is added, *influencing a Being into another*, i. e. into another Nature distinct from it, at least in Number; as the Father, in Men, is called a Cause of his Son, because the Essence and Humanity of the Father, is not the Essence and Humanity of the Son, viz. they have another Body and another Soul.

We commonly reckon four Causes, which have different Causalities, viz. the *final Cause*, which causes, as that *for which*; the *efficient Cause*, which causes, as that *of which*, the Effect is made; and both are called *external*; the *material Cause*, which causes, as that *from which*; and the *formal*, as that whereby the Effect is made; and these are called *intrinsic*, because they remain within the Thing produced. Some add a fifth Cause, viz. the *exemplary*, which causes, as that *to which*, or in whose Similitude the Effect is made.

The whole Thing can be made clearer by an Example.

An Architect is called the *efficient Cause* of a House; for he builds the House, whereby he is engaged by the Hope of some Reward, which is his End or *final Cause*, without which he had not determined himself to work: And this called *the End of the Workman*: A commodious Habitation is called *the End of the Work*. The Stones and Wood the House is composed of, is called *the Matter thereof*; and the Disposition of the several Parts, and of the whole House, which agree with the Idea of the Architect, is called *the Form of the House*. If the Architect has seen another House, or the Model of another House, on which he has built this, that first House, or the Model thereof, is the *exemplary Cause* of this last. Whence we can reckon four or five Causes. But among those, if we want to speak properly, the sole *efficient Cause* de-

serves the Name or Title of *physical Cause*; because that alone influences a Being into another: For the *final Cause* seldom exists any where else but in the Mind, and is only to be called *objective Cause*, since it does not move or determine the effectrice Cause, but as it is the Object of the Mind, v. gr. Health does not move to take a Medicine, but as our Mind considers it as something good. The material and formal Cause, or the Matter and Form, are rather Parts of the Thing produced, or composing Principles, than Causes. A Model or Type does not act in the Thing itself, but only is proposed to the effectrice Cause to be imitated.

There are also several Kinds of *effectrice Causes*.

The first Kind is of the logical or metaphysical Causes. That is called a logical or metaphysical Cause, which, though it be not a true Cause, it is notwithstanding such with Regard to our Knowledge, v. gr. the human Soul is consider'd as the Cause of the Understanding and Will, though it be not distinguished from them as a Thing from a Thing. Thus, likewise, the Disposition of Parts is called the Cause of Opacity, or Perspicuity, or other physical Affections; though Opacity or Perspicuity, or other Affections of that Kind, consist in the Situation of the Parts.

To this Kind of Causes, can be reported the Premises with Respect to the Conclusion; for they can be called the logical or metaphysical Causes thereof, inasmuch as this is deduced from those, and is contained in them. Tho' they be not the physical Causes thereof.

The second Kind of effectrice Causes, contain the *moral Causes*; which do not influence, physically, the Effect; but are, notwithstanding, with respect to it, and in Men's Opinion, as if they had a true Influence in it; v. gr. he that commands an Homicide, is called the Cause of the Homicide, though he does not kill the Man himself: He who sets Fire to a House, is the Cause of the Conflagration which ensues, tho' it be the Fire, and not the Man himself, which burns the House.

The third Kind includes the physical Causes; which again are either occasional only, or are in fact, Effectrices.

Occasional Causes, are those which give Occasion to some Effect, according to the Law established by the Author of Nature; v. gr. an Act of the human Will, is the occasional Cause of the Motion of the Arm, or of all other voluntary Motion in a human Body: As *vicissim*, the Motion of the animal Spirits is the Occasion of the several Thoughts we have in our Mind.

The most modern Philosophers are of Opinion, that the Bodies are no otherwise moved by the Spirits, viz. Angels, than by a certain Law which God has established between the Acts of their Will, and the Motion of the Bodies; and say the same Thing of the Motions of the Bodies, proceeding from the Collision of other Bodies: And that that Collision of Bodies is not to be taken for a Cause, properly said, but only for the Occasion of the Motion, since God alone is properly and strictly the Author of all Things and Motions.

Therefore, according to *Des Cartes*, and the other modern Philosophers, there is but one effectrice Cause, properly so called, viz. God himself: For no created Things, except the Will, properly operate: Even the created Will which determinates itself to act, and really acts, acts nothing physically besides itself, but occasionally only.

But though all these Things be true, when we examine Things with more Accuracy, we must confess, notwithstanding, that according to the Opinion of the Vulgar, several Causes, besides God, can be assigned, which are called second, and which operate in their Manner, though they depend, for their Operation, from the first Cause, v. gr. a Man begets another Man, an Eagle another Eagle.

Therefore the effectrice Cause is commonly divided into *first* and *second*. That is called *first*, which depends on no other to act, and to which all the others are subject, and this first Cause is God alone. The *second*, which depends on the first in its Operations, such are all the Creatures.

Either the second Cause is *general*, which contributes towards several and different Effects; as the Sun, which contributes towards several and different Generations;

tions; or is particular, which is restrained only to some Kind of Effects: Whence the general Cause is called *equivocal*, i. e. producing Effects of a different Kind from itself: But the particular Cause is oftner *univocal*, or of the same Ratio with the Effect it produces.

There is besides, a *principal Cause*, which is said to act by its own Power; and another *Instrumental*, applied to Action by another.

The *principal Cause*, is either a *Cause by itself*, or a *Cause by Accident*.

A *Cause by itself*, is that which by its Nature is appointed to produce some Effect, as an Eagle to produce an Eagle. That can also be called a *Cause by itself*, which operates something with Judgment and Deliberation.

A *Cause by Accident*, is that which produces some Effect, against one's Intention, as he who endeavouring to give a mortal Wound to a certain Jason, broke a Vomic, which all the Physicians could never cure; therefore he cured, *by Accident*, a Man of a dangerous Malady, in attempting to kill him. There are two Sorts of this *Cause by Accident*, according to *Aristotle*, lib. 2. *Physic.* c. 4. viz. *Fortune* and *Accident*; that is attributed to prosperous Events, and this to unhappy or even indifferent Events, v. g. when some body digging the Earth finds a Treasure contrary to his Expectation, that's *Fortune*; and when passing along a House a Tile falling from the Roof, wounds him, that's an *Accident*.

From this I'll pass to the first Axioms, which generally consist of the Ideas of the Being itself, of the Modes of the Being, and of the Attributes of both.

Till now we have dwelt on the Consideration of the Being, and of the Accident of the Being, and have made a Recapitulation of the Attributes, either common or proper to both; but as that which belongs to the first Notions or Propositions, or Axioms, formed of the first Ideas as well of the Being itself as of the Modes in general, and of the Attributes of both, be proposed in this Place, that the Principles derived from them, and dispersed throughout the other Disciplines, may appear contained in this first Philosophy, as Brooks are contained in Fountains. For the first Philosophy, or general Science, is as the common Parent of all the others, from which they all derive their Origin, and to which they refer all they have of Evidence or Certitude.

An *Axiom* is a common Sentence, known to every one who will have the least Attention to it; as this of *Aristotle*, *Metaphysic.* lib. 4. c. 3. *Impossibile est ut idem sit simul, & non sit*: For the Evidence of that Proposition is so great, and the Connection of the Attribute with the Subject so clear and distinct, that no Body, let him be ever so stupid, provided he will be attentive to it, can be ignorant of the Truth thereof.

Therefore as this is common to all Axioms, that their Truth is in some Manner clear and evident by itself, there seems to be no other first Rule of Truth and Certitude, or as the *Greeks* say other *Criterion*, or as the Schools speak, no other first Principle of a certain Knowledge, than the Evidence and Distinction of the Ideas. So that all that is contained in the distinct Idea of a Subject or Matter, that certainly can be affirmed of it. But this Truth, according to the common Method of the Schools, must be established and proved here: Therefore,

First Axiom.—The first *Axiom*, the first Criterion of Truth, the first Rule of Certitude, or, as the Schools express themselves, the first Principle of Knowledge, seems to be this: *All that is comprehended is the clear and distinct Idea of some Thing which certainly can be affirmed of it.* Because it is so clear by itself, that it cannot be proved by another, and that by it all others can be demonstrated.—It is clear by itself, since it consists in the Evidence and Distinction of the Ideas.—It cannot be proved by another Principle, since no other can be assigned prior to it.—And, lastly, all others can be demonstrated by it, as it will appear from the Induction of every one. For why should the Metaphysicians affirm, with so much Confidence, that *it is impossible the same Thing should be together and not be*; unless because in the clear and distinct Idea of a Thing actually existing, is included an Impossibility of not existing at that very same Time? Why should the Mathematicians say,

that *the Whole is greater than its Part*; unless because they understand, that the Part is contained in the clear and distinct Idea of the whole; though, perhaps, the Enumeration of every Part cannot be made? The same can be said of all others; v. gr. nothing is more certain among moral Philosophers than this Principle, *Do not to others what you would not have done to you*; and this among Physicians, provided it be contained within its proper Limits, *Contraries are cured by their Contraries*. Because in the clear and distinct Idea of natural Equity and Justice, this is contained, that he should not do to others what he would not have done to him: And thus of the rest.—Therefore the first *Axiom*, the first Principle of a certain Knowledge, seems to be this: *All that's contained in the clear and distinct Idea of something, that certainly can be affirmed of that Thing.*

COROLLARY I.

This *Axiom* pertains to the Essence of a Thing, not to the Existence, but when the Existence is essential to that Thing; or when the Existence is contained in the clear and distinct Idea of the Thing: So that it cannot be separated from the Conception thereof.

COROLLARY II.

As actual Existence, which is a certain Perfection, is contained in the clear and distinct Idea of God, or of a Being sovereignly perfect, it certainly can be affirmed of him. It certainly can be affirmed that God, or a Being sovereignly perfect, actually exists.

COROLLARY III.

But because actual Existence is not included necessarily in the clear and distinct Idea of Things created, viz. which are not Beings sovereignly perfect, and existing by themselves, it cannot be necessarily affirmed of them, but only contingently.

COROLLARY IV.

But the possible Existence of Things, which we know clearly and distinctly, whether they be created or not created, can certainly be affirmed; because *what we can conceive clearly and distinctly can exist*; which will be the second Axiom.

COROLLARY V.

We are certain in two Manners, that our Soul, which is a thinking Substance, exists while we think: For, 1. He that thinks, is so conscious to himself that he exists, that he cannot doubt of his Existence while he thinks. 2. We understand, that the Idea of a Thing existing, is included in the clear and distinct Idea of a thinking Thing.

COROLLARY VI.

There are two Things of whose Existence we cannot doubt, whatever Hypothesis may be made, viz. God and our Soul.

COROLLARY VII.

We cannot be certain by their Ideas of the Existence of other Things, whether spiritual or corporal; therefore we cannot discover them otherwise, but by certain Impressions made in the Organs of our Senses, and in our Mind; which Impressions cannot be excited within us during our whole Life, unless the Things exist, whereby they are excited, otherwise God would deceive us during our whole Life; which is quite foreign to the clear and distinct Idea of a Being sovereignly perfect, and consequently sovereignly wise, sovereignly true, and sovereignly good.

COROLLARY VIII.

The Existence of Bodies is made known to us by a vivid and constant Sense, and which operates always in the same Manner.

PNEUMATOLOGY.

We call the other Part of Metaphysick *Pneumatology*, or the Science of Spirits. A *Spirit* or the *Soul* is a *thinking Substance*: It is called a *Substance*, in which it agrees with the Bodies, and is called *Thinking*, i. e. per-

perceiving and willing, in which it differs from the Bodies: For the Spirit alone thinks, and nothing can be found in the Mind prior to that Thought.

It is needless to search here, whether Spirits exist; since our Soul cannot doubt of its Existence, since she is conscious to herself that she thinks, and knows for certain that she exists, before she can prove the Existence of Bodies. Therefore I should have contented myself with dividing this second Part of my *Metaphysicks* into three Articles, and had treated in the first of God; in the second, of Angels; in the third, of the human Soul; if I had not given a whole Treatise of *GOD and his Attributes*, under the Letter G; and another whole one of *Angels*, under the Letter A. Therefore I'll confine myself, in this Part, to my third and last Article, which is of the *human Soul*; which Article I'll subdivide into six others.—In the first Place, I'll treat of the *Nature of the human Soul*; in the second, of the *Knowledge of the human Soul*; in the third, of its *Immortality*; in the fourth, of its *Understanding*, and of *Ideas*; in the fifth, of its *Will and Liberty*; and in the sixth, of the *natural Habits*.

1. *As to the Nature of the human Soul*.—We cannot better discover the *Nature* of the human Soul, but by its *Affections and Operations*: For every Thing is made evident by its *Properties and Functions*; and we discover in the human Mind, or rational Soul, *Cogitations, viz. to understand, and to will; or to perceive, doubt, opine, &c.* which cannot proceed from the Body: For the Body, in whatever Manner it be divided, or moved, or formed, can never produce a Thought of itself, which belongs only to a Substance of a different Order, which we call spiritual: Therefore the *human or rational Soul*, is a certain spiritual and thinking Substance, created at the Image and Similitude of God. For we are said to be semblable to God for no other Reason, than because he has given us a rational Soul, whereby we are rendered capable to know and love him; which to demonstrate with some Method, we must prove, first, the Spirituality of the human Soul; which is done by an evident Demonstration of its being capable of Perception and Will; which Demonstration is confirmed by a continual Experience.

The *Epicureans*, on the contrary, are of Opinion, that a corporal Substance is capable both of Cogitation and Extension; or that Extension and Cogitation, are two Modes of a corporal Substance: As to be a Physician and Musician, are two Modes of Man.

But when the *Epicureans* speak in that Manner, they do not consider, as they should, the Nature of that Substance, whereby they are distinguished from the Brutes: For if they would consider it, they would soon understand, that it is certainly distinct from the Body. For those Things are certainly different, whose clear and distinct Ideas exclude *mutually, positively, and compleatly* each other: For there is not a more certain Argument of the Diversity or Distinction of Things, than the Diversity or Opposition of Ideas: But the Idea of Body, and the Idea of Soul, exclude mutually, *positively, and compleatly* each other. For nothing else is conceived by the *Body*, but an extended Substance, which can be divided, moved, &c. and by the *Soul*, we understand a thinking Substance. But the Extension, Figure, and Motion, exclude Cogitation *positively, and compleatly, and reciprocally*; for how much soever you may extend, move, and divide a Body, you'll never draw a Thought from it: Likewise, how great may be the Number of Thoughts, Perceptions, and Desires, we assemble together, you'll never be capable to form, of them, an extended Substance: Therefore the Body and the Soul are certainly distinguished; or the corporal and extended Substance is of a different Order from a thinking and spiritual Substance.

In fact, what can be imagined more absurd, than that a small Portion of Dust, or Matter is intelligent, and capable to have, not only corporal Things, and subject to our Senses, but likewise the spiritual, and most remote from the Commerce of the Senses? For we do not only conceive material Things, but understand likewise those which have no Affinity with the Materials, *viz. God and his Attributes, v. gr. his Unity, Eternity, Infinity, &c.* and the Laws of Argumentation, the

Laws of Justice and Equity, the Series and Difference of Times, &c. For who can be so presumptuous to attribute, to a very small Portion of Dust, such a Power, as to be capable to measure the Motions of the Heavens; to define, by a certain Calculation, the Vicissitudes and Inequalities of the Days and Nights, the Periods of Times, without mentioning other metaphysical and mathematical Demonstrations, which excite our Admiration, and which supposes a more noble Principle than a coarse Matter, whatever Form or Figure it may be adorned with?

What shall I say of the Acts of the Will; are they to be attributed to a corporal Substance? Can Matter love Justice, Constancy, and all the other Virtues of the Soul, as they are in fact beloved by our Will? For what do we love in the Saints and in the Martyrs, says St. *Augustin, Tract. 3. in Joan. num. 21. Their Members tore by wild Beasts; what's more offensive, if you consult only the Eyes of the Flesh; what's handsomer, if you consult those of the Heart? What do you think of a handsome young Man who is a Thief? Is he not in Horror to your Eyes? If you consult them, nothing is better shaped, his Features and Complection are delightful; and notwithstanding, when you hear that he is a Thief you fly from that Man. You see on the contrary, an old Man leaning on a Stick, who can scarcely walk for Age, his Face furrowed with Wrinkles; what do you see in him to please your Eyes? You hear that he is an honest Man, you love him, you embrace him.* From which it is rightly inferred, that a thinking and an extended Substance, or the Soul and Body are of different Kinds; that neither a thinking Substance is capable of Extension, nor an extended Substance of Thoughts.

The *Epicureans* insist, that the Idea of a Physician and of a Musician are different, and exclude mutually each other; though the same can be a Physician and a Musician, and therefore that the same Substance can be thinking and extended.

To which I answer, that the Idea of a Physician and the Idea of a Musician excludes each other mutually, of a *negative and incomplex Exclusion*, but not of a *positive and compleat one*. For the Idea of a Physician excludes *negatively* the Idea of a Musician, *i. e.* does not include it precisely within itself, and can be separated from it *incompleatly* at least, inasmuch as one can be considered a Physician, though he is not considered as Musician: But the Idea of Physician does not exclude *positively* the Idea of Musician, *i. e.* does not remove it from itself, nor can be *compleatly* separated from it; for the Idea of Musician always includes the *Mind*, which contains Musick, as the Idea of Physician includes the *Mind*, into which Physick is received: Whence both agree in that they are Modes of the Mind, or that they are the Mind itself affected with a certain Mode.

But the Idea of Body removes *positively and compleatly*, the Soul and *vicissim*; or the Idea of a Thing extended, removes from itself *positively and compleatly*, the Idea of a thinking Substance and *vicissim*: Therefore Thought and Extension cannot abide in one and the same Subject, as Musick and Medicine are received in the same Mind, and Whiteness and Sweetness are the Accidents or Modes of the same Milk. For, 1. Extension is not conceived but as a Thing extended in Length, Width, and Depth, and has no Relation to the Subject as a Mode; then no Body can think, without being conscious to himself of his Thought; but no Body in his Senses has ever said that a Body thinks, and is conscious to itself of its Thought.

Therefore to shew that our Mind is spiritual, it is not necessary to have Recourse to the Perception it has of universal and immaterial Things; since nothing without being spiritual can reach, by thinking, not only the Things universal and immaterial, but not even the single and corporal ones; but if a Substance understands singular Things, it will understand them universal, since one does not seem more difficult than the other. It cannot even happen, that one should, *v. gr.* conceive a single Circle, without knowing generally what a Circle is, and the Idea of a Circle be contained in the Mind, whereby all Circles be shewn possible. Whence when some Philosophers pretend, that Brutes reason on simple Things only, that imports a manifest Contradiction.

Contradiction; as, *v. gr.* a Sheep, which has never seen a Wolf, or which has only seen a red, not a black one, cannot fly, by Ratiocination, the Approaches of a black one, unless he has conceived, before, that general Notion, *all Wolves, whatever they be, or of whatever Colour, whether black or red, are to be avoided.* Therefore no Ratiocination is to be attributed to Beasts, with regard to simple Things, unless that with regard to universal Things be granted to them likewise; and that Ratiocination be understood deduced from universal Notions.

Neither is of a greater Strength what others imagine, *viz.* that Brutes conceive and discern Objects, but are not conscious of their Perception; for nothing can be conceived (unless there be an Ambiguity hidden in that Term of Perception) unless he that conceives be conscious of his Perception. Whence the Difference between our Perception, and that of the Brutes, is not to be placed in that we can conceive Things universal, and be conscious to ourselves of our Perception: But we are distinguished from them in that we are capable of thinking, not they. For when a Beast is said to see or to hear, its Audition or Vision consists in the sole Motions of the Spirits, and is not joined with Thoughts as ours.

The human Mind besides, though it be spiritual and uncorporal, is notwithstanding joined with an organical Body, by the Creator's Disposition and Order, to constitute a Man; therefore it is very well called the *Form of Man.*

COROLLARY.

From all these can be deduced the Definition of the human Soul by St. *Augustin, lib. de quantit. anim. c. 13.* If you will, says he, have the Definition of the Soul, and you ask me what the Soul is, I'll answer, that it seems to me to be a certain Substance indued with Reason, appointed to govern the Body. In which Definition the Term Reason seems generally taken for Thought, which confirms that of the modern Philosophers, that the Soul is a thinking Substance, which joined with the human Body, constitute a certain *Whole, viz.* Man.

2. *As to the Knowledge of the Soul.*—The human Soul being, as already observed, a thinking Substance, conscious to itself of its Thought; it is very certain that it must know itself naturally.

To this it is objected, 1. That if the human Mind should naturally know itself and its Thoughts, it should therefore conceive itself and them, from the very first Instant of its Creation, which it does not; therefore, &c.

I answer, that the human Soul does not know itself from the first Instant of its Creation, *i. e.* does not reflect on itself, notwithstanding which, it has some Sense of itself; therefore the human Soul is naturally a thinking Substance, and conscious to itself of its own Thought; whence it has always a Sense of itself; but agitated by the Motions of a very tender Body, it cannot in those first Times reflect on itself.

For we know by a daily Experience, that Infants conceive the Names, Qualities, and Differences, of the Things which are shewn them, and that long before they can express them by Words; which Perception of Things and Force of Memory, which sometimes is not to be found in Adults, is a plain Demonstration, that there is a perfect Reason in Infants; though for the Imbecillity of their tender Body, and its uncertain Motions, they are not capable of a long Attention. Therefore there is a perfect Reason in Infants as well as in Adults.

It is urged further, that if the Soul know itself from the first Instant of its Creation, we should certainly remember our Thoughts; not only those we have formed as soon as we were born, but those likewise we had in the Womb of our Mothers, which notwithstanding does never happen; therefore the Soul does not know itself from the first Instant of its Creation.

To this I answer, that in order to remember our Thought while the Soul is joined with the Body, it is necessary that some Vestigia should be traced in the Brain, whereby the Soul is determined to remember Things; for Memory does not consist in the Soul only, but more particularly in the Vestigia imprinted in the Brain; of which Infant's Brain being too soft, is not ca-

pable, it being besides agitated by the Bodies wherewith their tender one is environed; whence it happens, that so many different Impressions are confounded together, that they obliterate one another. Therefore, though the Soul thinks from the first Instant of its Creation, it notwithstanding cannot remember its Thoughts till the Substance of the Brain be grown harder, and capable of retaining the Impressions made on it; which seldom happens before Children be three Years of Age, though it sometimes happens sooner; as it is recounted of *Tasso*, that *Coriphæum* of the Italian Poets, who being yet but six Months old, reasoned as a Man; frequented the publick Schools at three Years of Age, and at seven was almost perfect Master of the Greek and Latin Tongues. But these Examples, if they be true, are not common, neither do we want them to support the Truth of our Assertion.

It is objected, 2. That our Soul knows itself, at least by some Knowledge attended with Reflection, *i. e.* after it has thought of something it returns on itself, to understand itself thinking; and therefore does not know itself naturally, but only after it has been informed with the Knowledge of some external Things.

I answer, that the Soul does not know itself only by a Thought accompanied with Reflection, from a previous Knowledge of external Things, but likewise from an inward Sense and Consciousness, whereby it is rendered sensible of its Existence, and knows itself to be a thinking Substance.

3. *As to the Demonstration of the Immortality of the Soul.*—The Life of the human Soul, as well as of all other spiritual Things, consists in the Thought; for Spirits live no otherwise than by Thought, and consequently cannot die unless they cease thinking. For while they exist they are understood capable of thinking; therefore they are to be considered as living as long as they exist, and this Certitude is metaphysical; for a Spirit not only cannot exist otherwise, but not even be thought otherwise.

Therefore when it is asked, whether the human Soul be immortal? The State of that Question is, whether Life be always agreeable to it; but as it cannot live without it exists, we must see first if after it is separated from the Body it continues to exist; for if it exists, it must necessarily live, since its Life, as consisting in the Thought, cannot be separated from its Existence.

It is an Article of the Christian Faith, and even the Foundation of the Christian Faith, that our Souls do not perish after they are delivered from the Prison of the Body, but are immortal. Hence Christ, *Matt. x. 28.* *Fear not them which kill the Body, but are not able to kill the Soul.*

But as we are to support this important Truth, not only by Authority, but by Reason likewise; and as the Council of *Lateran* celebrated under the Popes *Julius II.* and *Leo X.* exhorts, in the eighth Session, all the Philosophers, to employ all the Strength of their Reasoning, to prove that important Truth; it is just I should follow in this Place that salutary Advice, and chuse among an infinite Number of Reasonings alledged by the Philosophers both antient and modern, the best and most persuasive, to prove that important Truth of the *Immortality* of the Soul in an Age, where the little Regard most Christians have for a future State, which some of them have even the Impiety to turn into Ridicule, leaves us room to suspect, that but few of them think their Soul immortal: But previously to it, we must call to mind what we have already demonstrated, *viz.* that the human Soul is really distinct from the Body; therefore,

The human Soul is really distinct from the Body, since it can, by God's Omnipotency, exist without the Body; for if it being a thinking Substance, it can very well be conceived by us without a Body, *i. e.* without a Substance naturally extended; and therefore God can separate it from the Body, and preserve it without the Body; since God can effect what we conceive clearly and distinctly.

If this be certain, as it really is, even of a metaphysical Certitude, it follows hence, that the Immortality of the Soul can be demonstrated by the several following Arguments.

perceiving and willing, in which it differs from the Bodies: For the Spirit alone thinks, and nothing can be found in the Mind prior to that Thought.

It is needless to search here, whether Spirits exist; since our Soul cannot doubt of its Existence, since she is conscious to herself that she thinks, and knows for certain that she exists, before she can prove the Existence of Bodies. • Therefore I should have contented myself with dividing this second Part of my *Metaphysicks* into three Articles, and had treated in the first of God; in the second, of Angels; in the third, of the human Soul; if I had not given a whole Treatise of *GOD and his Attributes*, under the Letter G; and another whole one of *Angels*, under the Letter A. Therefore I'll confine myself, in this Part, to my third and last Article, which is of the *human Soul*; which Article I'll subdivide into six others. — In the first Place, I'll treat of the *Nature of the human Soul*; in the second, of the *Knowledge of the human Soul*; in the third, of its *Immortality*; in the fourth, of its *Understanding*, and of *Ideas*; in the fifth, of its *Will and Liberty*; and in the sixth, of the *natural Habits*.

1. *As to the Nature of the human Soul*.—We cannot better discover the *Nature* of the human Soul, but by its Affections and Operations: For every Thing is made evident by its Properties and Functions; and we discover in the human Mind, or rational Soul, Cogitations, viz. to *understand*, and to *will*; or to *perceive*, *doubt*, *opinate*, &c. which cannot proceed from the Body: For the Body, in whatever Manner it be divided, or moved, or formed, can never produce a Thought of itself, which belongs only to a Substance of a different Order, which we call spiritual: Therefore the *human or rational Soul*, is a certain spiritual and thinking Substance, created at the Image and Similitude of God. For we are said to be semblable to God for no other Reason, than because he has given us a rational Soul, whereby we are rendered capable to know and love him; which to demonstrate with some Method, we must prove, first, the Spirituality of the human Soul; which is done by an evident Demonstration of its being capable of Perception and Will; which Demonstration is confirmed by a continual Experience.

The *Epicureans*, on the contrary, are of Opinion, that a corporal Substance is capable both of Cogitation and Extension; or that Extension and Cogitation, are two Modes of a corporal Substance: As to be a Physician and Musician, are two Modes of Man.

But when the *Epicureans* speak in that Manner, they do not consider, as they should, the Nature of that Substance, whereby they are distinguished from the Brutes: For if they would consider it, they would soon understand, that it is certainly distinct from the Body. For those Things are certainly different, whose clear and distinct Ideas exclude *mutually*, *positively*, and *completely* each other: For there is not a more certain Argument of the Diversity or Distinction of Things, than the Diversity or Opposition of Ideas: But the Idea of Body, and the Idea of Soul, exclude mutually, *positively*, and *completely* each other. For nothing else is conceived by the *Body*, but an extended Substance, which can be divided, moved, &c. and by the *Soul*, we understand a thinking Substance. But the Extension, Figure, and Motion, exclude Cogitation positively, and completely, and reciprocally; for how much soever you may extend, move, and divide a Body, you'll never draw a Thought from it: Likewise, how great may be the Number of Thoughts, Perceptions, and Desires, we assemble together, you'll never be capable to form, of them, an extended Substance: Therefore the Body and the Soul are certainly distinguished; or the corporal and extended Substance is of a different Order from a thinking and spiritual Substance.

In fact, what can be imagined more absurd, than that a small Portion of Dust, or Matter is intelligent, and capable to have, not only corporal Things, and subject to our Senses, but likewise the spiritual, and most remote from the Commerce of the Senses? For we do not only conceive material Things, but understand likewise those which have no Affinity with the Materials, viz. God and his Attributes, v. gr. his Unity, Eternity, Infinity, &c. and the Laws of Argumentation, the

Laws of Justice and Equity, the Series and Difference of Times, &c. For who can be so presumptuous to attribute, to a very small Portion of Dust, such a Power, as to be capable to measure the Motions of the Heavens; to define, by a certain Calculation, the Vicissitudes and Inequalities of the Days and Nights, the Periods of Times, without mentioning other metaphysical and mathematical Demonstrations, which excite our Admiration, and which supposes a more noble Principle than a coarse Matter, whatever Form or Figure it may be adorned with?

What shall I say of the Acts of the Will; are they to be attributed to a corporal Substance? Can Matter love Justice, Constancy, and all the other Virtues of the Soul, as they are in fact beloved by our Will? For what do we love in the Saints and in the Martyrs, says St. *Augustin*, *Traët. 3. in Joan. num. 21. Their Members tore by wild Beasts; what's more offensive, if you consult only the Eyes of the Flesh; what's handsomer, if you consult those of the Heart? What do you think of a handsome young Man who is a Thief? Is he not in Horror to your Eyes? If you consult them, nothing is better shaped, his Features and Completion are delightful; and notwithstanding, when you hear that he is a Thief you fly from that Man. You see on the contrary, an old Man leaning on a Stick, who can scarcely walk for Age, his Face furrowed with Wrinkles; what do you see in him to please your Eyes? You hear that he is an honest Man, you love him, you embrace him.* From which it is rightly inferred, that a thinking and an extended Substance, or the Soul and Body are of different Kinds; that neither a thinking Substance is capable of Extension, nor an extended Substance of Thoughts.

The *Epicureans* insist, that the Idea of a Physician and of a Musician are different, and exclude mutually each other; though the same can be a Physician and a Musician, and therefore that the same Substance can be thinking and extended.

To which I answer, that the Idea of a Physician and the Idea of a Musician excludes each other mutually, of a *negative and incomplete Exclusion*, but not of a *positive and complete one*. For the Idea of a Physician excludes *negatively* the Idea of a Musician, i. e. does not include it precisely within itself, and can be separated from it *incompletely* at least, inasmuch as one can be considered a Physician, though he is not considered as Musician: But the Idea of Physician does not exclude *positively* the Idea of Musician, i. e. does not remove it from itself, nor can be *completely* separated from it; for the Idea of Musician always includes the *Mind*, which contains Musick, as the Idea of Physician includes the *Mind*, into which Physick is received: Whence both agree in that they are Modes of the Mind, or that they are the Mind itself affected with a certain Mode.

But the Idea of Body removes *positively* and *completely*, the Soul and *vicissim*; or the Idea of a Thing extended, removes from itself *positively* and *completely*, the Idea of a thinking Substance and *vicissim*: Therefore Thought and Extension cannot abide in one and the same Subject, as Musick and Medicine are received in the same Mind, and Whiteness and Sweetness are the Accidents or Modes of the same Milk. For, 1. Extension is not conceived but as a Thing extended in Length, Width, and Depth, and has no Relation to the Subject as a Mode; then no Body can think, without being conscious to himself of his Thought; but no Body in his Senses has ever said that a Body thinks, and is conscious to itself of its Thought.

Therefore to shew that our Mind is spiritual, it is not necessary to have Recourse to the Perception it has of universal and immaterial Things; since nothing without being spiritual can reach, by thinking, not only the Things universal and immaterial, but not even the single and corporal ones; but if a Substance understands singular Things, it will understand them universal, since one does not seem more difficult than the other. It cannot even happen, that one should, v. gr. conceive a single Circle, without knowing generally what a Circle is, and the Idea of a Circle be contained in the Mind, whereby all Circles be shewn possible. Whence when some Philosophers pretend, that Brutes reason on simple Things only, that imports a manifest

1st Argument.—The first Argument of the Immortality of the Soul, which is also a metaphysical one, taken from the innate Notion Men have of the human Soul, can be formed thus: That Substance is immortal, which separated from the Body subsists and lives; but the human Soul separated from the Body subsists and lives. First, it subsists, since it is a Substance distinct from the Body, which consequently does not want the Body to subsist. Secondly, it lives, because as it always thinks, and its Life consists in the Thought, it cannot subsist without Life: Therefore the human Soul is immortal.

What I say, that this first Argument is metaphysical, must be understood only of Life with respect to a thinking Substance; for a thinking Substance cannot be conceived without Life, since its Life consists in the Thought; therefore while it subsists it lives, or does not die, and consequently is immortal.

But as to what regards its Subsistence after it is separated from the Body, we are not certain of it, of a metaphysical Certitude, because it could happen by God's Omnipotency, that it should not continue to subsist, though it cannot die of itself. For as none but God exists necessarily, the Creatures existing only contingently, and as having received their Existence from God, it is manifest that they should return into their former Nothing, if God was to deprive them for a single Moment of his Influence. And as this Order has been established in Things created by the Almighty, that what he has once extracted from nothing should be continually preserved by him, it cannot happen, while that Order remains, that the human Soul separated from the Body should perish: This Certitude is physical, and can be supported by the following Argument.

2d Argument.—The human Soul is not of a worse Condition, than another Substance of an inferior Order, viz. the Body, or Part of the Body; but the Body deserted by the Soul inclines towards a Subsistence, v. gr. it is certain, of a physical Certainty, that a Branch of a Tree torn from the Trunk must remain, though the Trunk be burnt and reduced to Ashes: And it is also constant of a physical Certitude, that a created Thing cannot fail of itself, but only, if God withdraws his Concurrence, without which it cannot subsist; but God does not withdraw that Concurrence from a Part, when another perishes, on which it does not depend:

Therefore, at the Dissolution of the Body, God does not deny his Concurrence to the Soul to subsist, but preserves the Soul as well as the Body, with this Difference, notwithstanding, that the Body, being composed of Parts, undergoes several Mutations; but the Soul, which is simple and without Composition, remains whole and uncorrupted.

And hence Men have that innate Opinion of the Immortality of the rational Soul, for which we are indebted to Nature alone, not to Reason or Science; from which follows the third Argument, which is a moral one, and adapted to every one's Understanding.

3d Argument.—This Argument is taken from the common Consent of all Men, particularly those who have not renounced common Sense; as observed by Tully, lib. 1. *Tuscul. quest. Man's Solicitude, with respect to what is to happen after Death, is a great Proof that Nature itself has an innate Notion of the Immortality of the Soul.* And after he has commemorated all that is done with regard to a future Life, so as planting Trees, adopting Children, erecting Monuments for the Dead, exposing our Lives in the Service of our Country, he adds, *that if the Consent of all Men be the Voice of Nature, and all agree, that it is something pertaining to those who have departed this Life; we must be of the same Sentiment.*

Seneca agrees in this Point with Cicero, when he writes, *Epist. 117. That when he treats of the Eternity of the Soul, the Consent of all Men is a very great Inducement to believe it.* I omit here the Authority of Plato, Aristotle, and other Philosophers, which can be seen learnedly and elegantly explained by Cicero, lib. 1. *Tuscul. quest.*

For we must confess that this vast Universe, like a very well polished Republick, is under the Government of a supreme Being, who punishes Crimes and rewards Virtue, which could not be done if the Soul was not

immortal; for here in this World we see but too often the Innocent reduced to Misery, and oppressed; and the Wicked reign and live in Opulence; which is very justly observed by our Lord Jesus Christ, in the Parable of Lazarus and Dives, Luke xvi. 25. *Remember that thou in thy Life-time receivest thy good Things, and likewise Lazarus evil Things; but now he is comforted and thou art tormented.* Therefore the human Soul is immortal.

Those who deny the Immortality of the Soul, are not ashamed to employ Authority and Reason, in Defence of their impious Folly; and object, 1. That the Death of Man and Beast is the same, according to Eccles. iii. 19.

I answer, that it is true that the Ecclesiastes says in that Place, that the Death of Men and Beasts is the same, and their Condition the same, as to the Necessity of dying; *for as one dieth so dieth the other, yea they have all one Breath, so that a Man has no Pre-eminence above a Beast,* with respect to a corporal Life which is common to all Animals. Whence the Ecclesiastes proceeds; *all go unto one Place, all are of the Dust, and all turn to Dust again,* viz. on Account of the Body; for the Soul which is not made of Dust, does not turn to Dust: The Soul notwithstanding, ever since the original Sin has been so wrapped, or rather buried in the Matter, that having in some Manner forgot its Origin, it minds nothing but terrestrial Things, and does not remember its being born for Heaven. Therefore the Ecclesiastes adds, *who knoweth the Spirit of Man that goeth upward, and the Spirit of the Beast that goeth downward to the Earth?* For several of those who would be accounted wise, as the Epicureans, do not know this; because they are wholly taken up with corporal Things, and neglect to consider what belongs to the Soul; tho' the Ecclesiastes admonishes them in the same Place, viz. in the Verses 16 and 17. that we must expect another Life, in which God will reward the Just, and punish the Impious; but they do not mind neither these, nor an infinite Number of other Passages of the Scripture, whereby they can be convinced of Impiety, searching only the very few, of which they imagine, they can easily abuse.

It is objected, 2. From St. Paul, 1 Tim. vi. 16. *That God alone is immortal.*

I answer, by an Explication of the Text of the Apostle, God alone is immortal of himself it is true, but not of another: For God alone has the Immortality of himself, because he alone is uncreated, and sovereignly perfect in himself, but the angelical and human Soul is immortal by Participation only, as having received it from God. Whence St. Augustin, *Epist. 166. otherwise 28. c. 2. says, that the human Soul is immortal in its Manner, but not in all Manners as God is, of whom it is said, that he alone has the Immortality.* Hence it is, that God is called in the Schools eternal and immortal, as well inwardly as outwardly, i. e. he can be annihilated neither by himself nor by another: But the human Soul is immortal inwardly only, because it cannot be annihilated by itself, but God can annihilate it; therefore in the sixth general Council, the human Souls are said to be immortal by God's Grace only, not by Nature, because they receive the Immortality from God's Grace and Will, not from themselves.

It is objected, 3. With Lucretius, lib. 3. *de rerum natur.* with Pliny the older, lib. 7. *natur. hist. c. 55.* and with the whole Family of the ancient Epicureans, that the Soul is born with the Body, or in the Body, and consequently perishes with the Body.

I answer, that though the Soul be born with the Body, or in the Body, it is notwithstanding a Substance distinct from the Body, and of a quite different Kind, and consequently subsists, though the Body perishes.

If it be said, that the Soul of the Brute perishes with the Body, because born with the Body; and therefore the human Soul perishes with the Body, because born with the Body. I'll deny the Parity, and give for Reason of the Disparity, that the Souls of Beasts are corporal and consist of Parts, viz. of the Blood, and of the animal Spirits; but the human Soul is spiritual and thinking: Therefore the Souls of Beasts can be dissolved and corrupted, as likewise the animal Spirits are dissipated in Man; but the human Soul remains always untouched

untouched and uncorrupted, as being very simple, entirely without Parts, and of a different Nature from the human Body.

It may be urged, that there is a great Similitude between Men and Beasts.

To which I answer, that there is a great Similitude, with regard to the corporal and animal Functions, for a Man eats, sleeps, grows sick, &c. as well as a Beast; but not with regard to the spiritual Functions, viz. Understanding and Will: For there is no intelligent Faculty in Beasts, no Liberty, but they are moved by a blind and temerarious Impetuosity.

It may be urged further, that there are some Beasts, in which is discovered a great Sagacity: Which I answer in the Negative. For if there was some Ratiocination in Beasts, they would communicate their Thoughts by some Signs, not only between themselves, but to us likewise, as a Man travelling among foreign Nations, and is ignorant of their Language, learns by a continual Use, though perhaps very imperfectly, that Language, to converse or trade with them; but Beasts don't communicate their Thoughts to us by any Signs or Words, though they have Organs in some measure proper to speak, as is seen in Magpies and Parrots: Therefore Beasts have no Ratiocination.

That Argument besides, does not shew that the human Soul is corruptible and mortal; but only grants the Immortality to the Souls of Beasts. For if Beasts think as well as Men, their Thoughts must certainly proceed from a spiritual Soul which is uncorruptible and immortal, which I have proved to be false in my Treatise of *Animals*, under the Letter A.

Others object, that though the human Soul be capable of Thoughts, it notwithstanding perishes with the Body.

I answer this Objection in the Negative: For the Soul is a Substance distinct from the Body, and does not depend of the Body for its Subsistence, as I have already so often repeated.

But, say they, God has created the human Soul for the Body only; therefore the Body perishing, which is animated therewith, it must perish likewise.

I answer, that God has not created the Soul for the Body only, viz. a most noble Substance for a most ignoble, but has created it for himself. Whence our Soul, as formed to God's Resemblance, and created for himself, is not quite deprived of its Functions when the Body dies, as some have falsely pretended, but must be subservient to God's Glory to all Eternity. Therefore it is necessary it should remain after the Dissolution of the Body.

They insist, that what has a Beginning must have an End, according to *Aristotle*, lib. 1. de celo, c. 12. and that though the human Soul be created for God, it has notwithstanding a Beginning; therefore must have an End with the Body.

I answer, that let it be that what has a Beginning by Generation, as an Animal, a Tree, or some other natural Thing composed, should have an End; but not what has a Beginning by Creation, which is the Case of the human Soul, which has a Beginning by Creation not by Generation; therefore has no End. For if the Matter, which is created, continues always to exist, and is not annihilated, unless God refuses it his Concurrence for its Existence, much more the human Soul, which is a Substance much more noble and much more perfect, can subsist with God's Concurrence.

They urge further, that the Soul increases in Infants, becomes stronger in Youths, and declines in old Persons. That it is besides, healthy in a healthy Body, infirm in a cacochimous, is disturbed in a Drunkard; and is subject to all the Changes of the Body: Therefore is either corporeal, or depends on the Body in such a Manner, that when it dies, the Soul cannot subsist.

I answer, that the Soul increases in Infants, &c. because of the strict Union which subsists between it and the Body: But not for itself, and its Nature. Therefore the Soul seems to increase in Infants, to grow stronger in Youths, &c. because God has established this Law between the Soul and the Body, that almost all the Thoughts of the Soul should be immediately followed by some Motions of the Spirits in the corporeal

Organs, and *vicissim*. Whence the more those Organs grow perfect, the freer and quicker is the Motion of the Spirits, and then the Soul seems to increase or to grow strong, in that it is more easily determined to thinking: But when the Spirits are disturbed or fail, the Thought for the same Reason, seems to be disturbed or fail: Therefore in a Lethargy, Frenzy, and Ebriety, it is not the Soul which suffers, but the Brain only, which is the Instrument of the Soul: And hence it is the Brain which must be cured, not the Soul. But when the Soul is separated from the Body, it is no longer agitated by those Sorts of Motions, but remains the same, and in the same State; therefore it cannot be inferred that it perishes with the Body, or is annihilated.

As to what *Lucretius* says in the Book above quoted, that those are mad who join the Eternal with the Mortal, i. e. the Soul with the Body; I say myself, that in that Place, no more than in several others of his Writing, *Lucretius* himself does not speak as a Man of Sense; since it is very convenient that a spiritual Substance should be joined with a corporal one, that the Souls as well as the Bodies may be in some Manner associated in one and the same Composite, to avoid all Kinds of Flaws in the divine Works.

It is objected, 4. With *Peter Pomponatius*, a Philosopher of *Mantua*, and with all those who are of Opinion, that the Immortality of the Soul is to be proved by Faith alone, not by Reason; that our Sentiment is contrary to *Aristotle's* Authority.

I answer in the Negative; for though several imagine that *Aristotle* has doubted of the Immortality of the Soul, as he teaches, notwithstanding, lib. 1. *Ethic.* c. 11. that the Dead are sensible of the Fortune of their Friends, he could not be certainly of Opinion, that the Soul is mortal.

They insist, that the human Soul separated from the Body would be in a violent State, and therefore could not subsist.

I answer in the Negative, 1. Because a Substance which is in a violent State is not immediately annihilated; but if it be corporal and consisting of Parts, is only dissolved. Whence the damned Souls, which are simple and spiritual, though they be in a violent State, do not perish, but live continually in their Torments.

2. Our Adversaries do not prove that the human Soul is in a violent State, after it has been separated from the Body. For, in their Opinion, it should be in a violent State, as retaining some Propensity towards the Body; but though it should have such a Propensity, it could not be said, that it would be in a violent State; for that Propensity does not engage the Mind in such a Manner as to make it pine after the Body.

3. If the Soul be a blessed one, and intimately united with God, it is not in a violent State; for its Union with God fills it with so much Joy, that it considers its Separation from the Body almost as nothing. Therefore the human Soul subsists and lives, though separated from the Body.

But, say you, the rational Soul separated from the Body, would be idle, at least; for it could not feel, nor understand, nor be moved, nor communicate its Thoughts to other Men's Minds; which is quite absurd.

I answer in the Negative: For that Substance is not idle which thinks; but the human Soul, separated from the Body, thinks: Since it does not borrow the Power of Thinking from the Body, and does not want sensible Species, or Objects, to excite it to think: For there are several Things in the Understanding, which were not in the Soul before. Therefore the human Soul, separated from the Body, does not remain idle.

What is said, that there is no Sensibility without the Body, is true in some Sense; viz. if *Sense*, or, as we express ourselves sometimes, *Sensation*, be defined, with *St. Augustin*, Lib. de quant. anim. c. 30. a Passion of the Body proceeding from the Soul. Because as it is no longer joined with the Body, it is no longer affected, occasionally, by its Motions. But if *Sensation* be taken for a certain interior Affection of the human Soul, commonly occasioned by the Body, as Sorrow and Joy, certainly the Soul, separated from the Body, can be sensible; because, by God's Will, it can be affected with the same Sentiments of Sorrow and Pleasure, it was

when

when joined with the Body. It is not even against all Appearance of Truth, that God could dispose some Part of the Matter with respect to a Soul separated from the Body, so that as it was moved by a Sentiment either of Joy or Sorrow, occasioned by the Motions made in the human Body; likewise by the Occasion of the Motions of that Portion of Matter, it is susceptible of Joy or Sorrow: And by the same Reason can be explained how the damn'd Souls are tortured by the Fire of Hell. For though their Substance cannot be consumed by the Flames, they notwithstanding, by Occasion of the Matter they are environed with, can feel the Fire.

The human Soul, besides, separated from the Body, can both understand itself, God, and several other Things.

1. Itself; because it cannot think, without being conscious to itself of its Thought: Therefore as it thinks continually, it can likewise continually understand itself.

2. It understands God; because it has continually God present, either as Remunerator; or as Avenger.

3. It can understand several other Things, *viz.* either those which she sees in God; or those with which it has some Affinity, or Relation: Therefore the Soul can understand without the Assistance of the Body.

It can, likewise, be moved without the Body, *viz.* of that Motion which is agreeable to Spirits; for as spiritual Things are not properly in a Place, (as I have observed in my Treatise of *Angels*, under the Letter A) neither are they properly moved, or they are not properly transferred from one Place to another, unless it be *definitively*, *viz.* as they can be present, by their Thought, sometimes in one Place, and sometimes in another; though they be not environed with that Place. Lastly, as to the Manner, it can open its Mind to other Souls, or understand the Thoughts of others; the Thought of one is manifested to the other, by Means of his Will; as, at present, by Means of some Words or Sayings, the Thought of a Man is communicated to another Man.

4. *Touching the human Understanding, and Ideas.*—We must distinguish in a thinking Substance two principal Faculties, *viz.* those of understanding and of willing; the former is called *Understanding*, and the latter *Volunté*: Tho' Understanding signifies rather *Perception* or *Intellection*, than the *Faculty of Understanding*; and *Volunté* rather the *Act of Willing*, than the *Power*. All Philosophers, the *Thomists* excepted, are of Opinion, that those Faculties are not really distinct from the Soul; not without just Reason. For nothing obliges us to distinguish those Faculties from the Soul; if the Soul alone can acquit itself of its Functions, without that real Distinction; which it can do, since the Soul thinks of itself; and to think is to understand and will: Therefore the Understanding and Will are not to be really distinguished from the Soul itself; *since Beings are not to be multiplied without Necessity*.

Notwithstanding which I'll treat of both Faculties, and of the others which have any Affinity to them, separately, to avoid Confusion: Speaking first of the *Understanding*, which is commonly defined, *a Faculty of the human Soul, conceiving all Being, and the Mode of the Being*; and is the Soul itself, as Understanding and Conceiving; as the Will is the same Soul as Willing.

It is very difficult, and very laborious, to discover how the Soul perceives.

The *Epicureans*, who falsely persuade themselves, that there is nothing in Nature but Atoms and a Vacuum, have Recourse to *Idols* and *Spéctres*; which ridiculous Opinion is not worthy our Notice. There are two other Sentiments of Philosophers, deserving as little our Attention: The first is that of the *Peripateticians* or *Scholastics*; the second is that of the *Cartesians* or *Platonicians*, exemplified by the Author Of the *Enquiry after Truth*.

The Sentiment of the PERIPATETICIANS.

The *Peripateticians* distinguish from *Aristotle*, *Lib. 3. de anim. c. 5, & 6.* two Sorts of Understanding, *viz.* an *active Understanding*, and a *passive Understanding*. They teach that the *active Understanding*, is that which causes that *Things which possibly can be understood, are actually understood*. By forming the Ideas, or spiritual

Representations of Things, which in Theology are called the *Word of the Wind*, or *expressed Species*, to distinguish them from the Species from Objects, which are called *impressed Species*. The *active Understanding* is said to express those Species, by *Conversion to Phantasmata*, or by being attentive to the corporal Species traced in the Phantasy, which, though not seen by him, he notwithstanding imagines that he forms his Ideas on their Model; wherefore the Understanding and Phantasy are Faculties radicated and founded in the same Subject, or the rational Soul; which notwithstanding is very difficult to conceive.

They call *passive Understanding*, that *which receiving the Ideas formed by the active, understand all Things*. For though the Name of Idea is sometimes taken for the Perception of the Mind, it is notwithstanding, after taken for the *Species* of the Thing, or conceived Object; that is called a *formal*, and this an *objective Idea*. But we must observe, *en passant*, that the Greek Word used by *Aristotle* in this Place, signifies the Soul itself, not the Understanding taken for a Faculty of the Soul; therefore our Souls can be called and considered as active and passive together; for it is *active* when it determines itself to Action, in which Sense it is called *Will*; and is *passive* when it actually understands, and then is called *Understanding*.

The Sentiment of the CARTESIANS.

The *Cartesians*, on the contrary, pretend that all Perception is *passive* within us, so that our Understanding does not form the *Ideas* of the intelligible *Species* of Things, but receives them only: Which Ideas *Des Cartes* teaches to be either *innate*, or *adventitious*, or *factitious*, as I have explained it in the *Logic*; and imagines them to be united with the Motions of the animal Spirits, as to be occasional to one another.

My own Sentiment.

For my Part I am of Opinion, that it is not very difficult to shew, that there is no active Understanding in a created Soul, as the *Peripateticians* imagine; but that the divine Understanding alone, who is illuminated by none, and illuminates all others, acts, and represents to the created Spirits the Ideas contained within him: Therefore I am of Opinion, that there is no active Understanding within us, since our Understanding cannot form Ideas or spiritual Images of Things, for he has not even an Idea of himself, in the Sense the *Peripateticians* take it: For before he could form those Ideas, he should either conceive the Things themselves, or be ignorant of them; if he could perceive them, he would be already informed of an intelligible Species or Idea of them, and therefore should not want a new Species to perceive them: If he was ignorant of them, he could never be capable to form a representative Species of them, since we cannot form an Idea of a Thing which we have no Knowledge of: Therefore there is no active Understanding within us.

It may be said, that our Understanding does not understand otherwise than by the Species painted in our Phantasy, or imaginative Faculty, from which we draw his Ideas; and therefore that our Understanding is active as well as passive.

I answer, 1. That the Things we know are of two Kinds, says *St. Augustin*, *lib. 15. de Trinit. c. 12.* One of the Things which our Minds conceive by means of the Senses; the other of the Things which we know by ourselves, *i. e.* without a Conversion to those Images painted in the Brain.—2. If the Understanding understand no other-wise but by a Conversion to the Images painted in the Brain, he either conceives them or not conceives them; if he conceives them, he wants no intelligible Species to understand, therefore he would form them in vain; and if he does not know them, how can he fabricate Species resembling to them, since there can be formed no Representation or Species of a Thing unknown? I confess however, that our Mind conceives the Things corporal, by means of the Motions excited in the Brain, or of the Images traced in it; but it does not appear that such a Thing proceeds from the Similitude which those Species or Images have with the Thoughts known, which Similitude, as an *assimilative Power*, should more

our Understanding, to produce that Idea semblable to the Thing itself; but it can be said, on the contrary, that a Law has been established by the Author of Nature, between the Soul and the Body, whereby, on Occasion of some Motions of the Body, certain Perceptions are excited in our Understanding.

But, say you, if those Motions have no Resemblance with the Things conceived, how can they excite a Perception thereof?

I answer, by that Law above-mentioned; for nothing could hinder God from appropriating, by his Omnipotency, some Thoughts of our Mind to certain Motions of the Body; as we join some of our Thoughts with certain Words, which are not at all semblable to the Things signified and excited in our Mind.

COROLLARY I.

Our Understanding must be called a *passive* Faculty of the human Soul, not an active one. For receiving the Ideas, is not acting, but suffering. But our Mind, in Understanding, receives the Ideas; since it not only does not form them, as already observed, but even receives them, sometimes, in Spite of itself. Therefore, &c.

COROLLARY II.

If the Intellection of our Mind be voluntary, it is always preceded by some Determination of the Will, whereby the Mind applies itself to understand; and that Application, which is also called *Attention*, is a true Action, which the Will can do, or omit at Pleasure. Whence, when the Mind is attentive to itself, to know itself, it really acts; and it is said created to God's Resemblance, in that it knows and loves itself: Though in knowing and loving itself, it does not produce Substances, as it is done in the blessed Trinity.

When it is said, that by thinking, one represents something to himself, that Representation, consider'd as an Action, is nothing else but the Determination of the Will, whereby the intellectual Power, which is passive, is applied to conceive it; or is the *Attention* of the created Mind, which like a natural Prayer, impetrates from God, according to the Hope himself has established, that he should inform him of the Idea of certain Things; but is not an Action of the Understanding, which forms, or fabricates an *expressed Species*.

COROLLARY III.

When the human Soul knows itself by its Conscience, it does not produce then an Idea distinct from itself, and *Representative* of itself; but is only conscious by an inward Sense, of its Existence, and of its Thought.

COROLLARY IV.

What I say here of the human Mind, may be attributed to all other created Understanding; for God alone, by contemplating himself, and all other Things in himself, operates; because God alone, neither is, nor can be illuminated by any other Being; whereas, on the contrary, he illuminates all others.

COROLLARY V.

God can be called the Light of the created Souls, since he dissipates all their Darkeness, and infuses Ideas into them, which they can find neither in themselves, nor in the Objects; since they cannot be immediately affected by the Objects.

COROLLARY VI.

God does not seem to concur with a created Understanding, otherwise than by his Irradiation.

COROLLARY VII.

The *Attention* of the Mind is the occasional Cause, or, as the Author of the Inquiry after Truth expresses himself, is like a *certain natural Prayer*, whereby we engage God, to grant us Understanding: Hence it follows, that we have some *innate Ideas*.

We call an *innate Idea*, that which is born with us; which Idea is justly called a natural Light; wherewith God illuminates the human Souls. The Idea of a Being sovereignly perfect, is of that Kind; which,

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as we can be made Partakers thereof, in different Manners, we consider, first, as a Being, then as a sovereign Being, *i. e.* as true, as good, &c. Hence it is, that we have generally the Idea of a Being, and of his Attributes, Differences, or Modes, *viz.* of Unity, Truth, Beauty, &c. which are requisite for a sovereign Perfection: Hence likewise is deduced the Idea of Extension, and of those Things which belong to Extension, *viz.* Divisibility, Mobility, all which Ideas, could not pass through the Senses. We have naturally, not only those Ideas, but the Relations which have a mutual Regard to one another; and in that consists the Force of the natural Light, by Means whercof we join the Ideas which are semblable to one another, and remove those which are dissemblable; and form all the Judgments which are certain and evident.

It may be objected, 1. That all our Ideas drawing their Origin from the Senses, we have no innate ones; and that they draw their Origin from the Senses, is evident from this Axiom, so common in the Schools, *Nihil est in intellectu quod prius non fuerit in sensu.*

I answer, that those Ideas have not their Origin from our Senses, which have neither Colour, Taste, nor Sound; nor any other sensible Quality; such are the Idea of a Being in general, and of its Attributes or Modes; the Idea of a God, &c. But those only draw their Origin from our Senses, the Objects wherecof can affect the Senses, *viz.* the Ideas, or rather Perceptions of the sensible Qualities, as of Colour, Sound, Smell, Taste, Heat, Cold, &c. from which proceed the Affections of Joy, Sorrow, &c. Though those Ideas do not depend on the Senses in such a Manner, that the Senses are the Causes thereof, properly said, but only, they draw their Origin from them, as from Occasions. Therefore that Principle cannot be generally maintained, *Nihil est in intellectu*, &c. since it cannot have Place but in the sole Perceptions of the sensible Qualities.

Having thus established the Existence of innate Ideas, we must consider next in what consists the Nature or Entity of the innate Ideas, objectively taken; and which are those which we conceive by clear Ideas, and which by confused Ideas.

Des Cartes, and the *Cartesians*, are generally of Opinion, that Perception is made within us, by innate, or adventitious, or factitious Ideas, *i. e.* by Virtue of the Law which God has established between the Soul and the Body, whereby, on Occasion of the Motions made in our Brain, several Ideas or Perceptions are excited in our Minds; but the Manner how Things are present to our Understanding, and are united to it, was left by them undecided. But Father *Mallebranche*, a *Frenchman*, has gone further, in that excellent Work he has entitled, *Of the Inquiry after Truth*. For he distinguishes in us, four different Manners of Perception.

The first is that whereby a Thing is seen in itself. — The second, that whereby a Thing is not seen in itself, but by a *clear Idea*, which alone is properly an Idea, and which represents to our Mind, either the Being itself, or the Mode of the Being. — The third is *by an inward Sense*, or *by Conscience*, how the human Mind is conscious of its Affections, or Sensations. — The fourth is only *by Conjecture*; whereby the Minds of other Men seem to be known to us. — We may be permitted to add a fifth, and that supernatural, *by divine Revelation*, or Faith, whereby we know the Mysteries of the Christian Religion.

Therefore what *Des Cartes* says, we know *by a confuse Idea*, the Author of the Inquiry after Truth, is of Opinion, that we know it *by an inward Sense*, or by *Conscience*; for he admits no Idea which is not clear and distinct, which represents Things to our Mind, clearly and distinctly, such are the Idea of Extension, the Idea of a Number, &c. but this must be explain'd in a clearer Manner.

The first Manner of Perception, when a Thing is seen in itself.

Therefore, if we believe Father *Mallebranche*, we know the Essence of God, not in an Idea, Species, or Image distinct from God; but we know it in God himself; *Quatenus* he is present to our Mind, and illuminates it.

when joined with the Body. It is not even against all Appearance of Truth, that God could dispose some Part of the Matter with respect to a Soul separated from the Body, so that as it was moved by a Sentiment either of Joy or Sorrow, occasioned by the Motions made in the human Body; likewise by the Occasion of the Motions of that Portion of Matter, it is susceptible of Joy or Sorrow: And by the same Reason can be explained how the damn'd Souls are tortured by the Fire of Hell. For though their Substance cannot be consumed by the Flames, they notwithstanding, by Occasion of the Matter they are environed with, can feel the Fire.

The human Soul, besides, separated from the Body, can both understand itself, God, and several other Things.

1. Itself; because it cannot think, without being conscious to itself of its Thought: Therefore as it thinks continually, it can likewise continually understand itself.

2. It understands God; because it has continually God present, either as Remunerator; or as Avenger.

3. It can understand several other Things, *viz.* either those which she sees in God; or those with which it has some Affinity, or Relation: Therefore the Soul can understand without the Assistance of the Body.

It can, likewise, be moved without the Body, *viz.* of that Motion which is agreeable to Spirits; for as spiritual Things are not properly in a Place, (as I have observed in my Treatise of *Angels*, under the Letter A) neither are they properly moved, or they are not properly transferred from one Place to another, unless it be *definitively*, *viz.* as they can be present, by their Thought, sometimes in one Place, and sometimes in another; though they be not environed with that Place. Lastly, as to the Manner, it can open its Mind to other Souls, or understand the Thoughts of others; the Thought of one is manifested to the other, by Means of his Will; as, at present, by Means of some Words or Sayings, the Thought of a Man is communicated to another Man.

4. *Touching the human Understanding, and Ideas.*—We must distinguish in a thinking Substance two principal Faculties, *viz.* those of understanding and of willing; the former is called *Understanding*, and the latter *Volunté*: Tho' Understanding signifies rather *Perception* or *Intellection*, than the *Faculty of Understanding*; and *Volunté* rather the Act of Willing, than the Power. All Philosophers, the *Thomists* excepted, are of Opinion, that those Faculties are not really distinct from the Soul; not without just Reason. For nothing obliges us to distinguish those Faculties from the Soul; if the Soul alone can acquit itself of its Functions, without that real Distinction; which it can do, since the Soul thinks of itself; and to think is to understand and will: Therefore the Understanding and Will are not to be really distinguished from the Soul itself; *since Beings are not to be multiplied without Necessity.*

Notwithstanding which I'll treat of both Faculties, and of the others which have any Affinity to them, separately, to avoid Confusion: Speaking first of the *Understanding*, which is commonly defined, *a Faculty of the human Soul, conceiving all Being, and the Mode of the Being*; and is the Soul itself, as Understanding and Conceiving; as the Will is the same Soul as Willing.

It is very difficult, and very laborious, to discover how the Soul perceives.

The *Epicureans*, who falsely persuade themselves, that there is nothing in Nature but Atoms and a Vacuum, have Recourse to *Idols* and *Spéctres*; which ridiculous Opinion is not worthy our Notice. There are two other Sentiments of Philosophers, deserving as little our Attention: The first is that of the *Peripateticians* or *Scholastics*; the second is that of the *Cartesians* or *Platonians*, exemplified by the Author Of the *Enquiry after Truth*.

The Sentiment of the PERIPATETICIANS.

The *Peripateticians* distinguish from *Aristotle*, *Lib. 3. de anim. c. 5, & 6.* two Sorts of Understanding, *viz.* an *active Understanding*, and a *passive Understanding*. They teach that the *active Understanding*, is that which causes that *Things which possibly can be understood, are actually understood.* By forming the Ideas, or spiritual

Representations of Things, which in Theology are called the *Word of the Wind*, or *expressed Species*, to distinguish them from the Species from Objects, which are called *impressed Species*. The *active Understanding* is said to express those Species, by *Conversion to Phantasmas*, or by being attentive to the corporal Species traced in the Phantasy, which, though not seen by him, he notwithstanding imagines that he forms his Ideas on their Model; wherefore the Understanding and Phantasy are Faculties radicated and founded in the same Subject, or the rational Soul; which notwithstanding is very difficult to conceive.

They call *passive Understanding*, that *which receiving the Ideas formed by the active, understand all Things.* For though the Name of Idea is sometimes taken for the Perception of the Mind, it is notwithstanding, after taken for the Species of the Thing, or conceived Object; that is called a *formal*, and this an *objective Idea*. But we must observe, *en passant*, that the Greek Word used by *Aristotle* in this Place, signifies the Soul itself, not the Understanding taken for a Faculty of the Soul; therefore our Souls can be called and considered as active and passive together; for it is *active* when it determines itself to Action, in which Sense it is called *Will*; and is *passive* when it actually understands, and then is called *Understanding*.

The Sentiment of the CARTESIANS.

The *Cartesians*, on the contrary, pretend that all Perception is *passive* within us, so that our Understanding does not form the *Ideas* of the intelligible Species of Things, but receives them only: Which Ideas *Des Cartes* teaches to be either *innate*, or *adventitious*, or *factitious*, as I have explained it in the Logic; and imagines them to be united with the Motions of the animal Spirits, as to be occasional to one another.

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For my Part I am of Opinion, that it is not very difficult to shew, that there is no active Understanding in a created Soul, as the *Peripateticians* imagine; but that the divine Understanding alone, who is illuminated by none, and illuminates all others, acts, and represents to the created Spirits the Ideas contained within him: Therefore I am of Opinion, that there is no active Understanding within us, since our Understanding cannot form Ideas or spiritual Images of Things, for he has not even an Idea of himself, in the Sense the *Peripateticians* take it: For before he could form those Ideas, he should either conceive the Things themselves, or be ignorant of them; if he could perceive them, he would be already informed of an intelligible Species or Idea of them, and therefore should not want a new Species to perceive them: If he was ignorant of them, he could never be capable to form a representative Species of them, since we cannot form an Idea of a Thing which we have no Knowledge of: Therefore there is no active Understanding within us.

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Therefore what *Des Cartes* says, we know *by a confuse Idea*, the Author of the Inquiry after Truth, is of Opinion, that we know it *by an inward Sense*, or by *Conscience*; for he admits no Idea which is not clear and distinct, which represents Things to our Mind, clearly and distinctly, such are the Idea of Extension, the Idea of a Number, &c. but this must be explain'd in a clearer Manner.

The first Manner of Perception, when a Thing is seen in itself.

Therefore, if we believe Father *Mallebranche*, we know the Essence of God, not in an Idea, Species, or Image distinct from God; but we know it in God himself; *Quatenus* he is present to our Mind, and illuminates it.

For

For nothing, either Image, Species, or Resemblance, can represent God to us. Therefore the human Soul is not only joined with the human Body, but is likewise joined in its Manner with God himself.

We do not only know the divine Essence, because it presents itself in some Manner to our Mind, but sees, likewise, in it, as in a Looking-Glass, the general Ideas of Things, the first and immutable Laws of our Judgments, and Ratiocinations, and the Axioms which express the mutual Relations of those Ideas to one another.

The second Manner of Perception by a clear Idea.

Our second Manner of *Perception*, according to the same Author, is by a *clear Idea*, i. e. as himself interprets it, in considering the *archetypal Idea*, in which the Bodies are contained in an intelligible Manner, which archetypal Idea is nothing else in itself, but the divine Essence, *as participable of the Creature, in some Manner of Similitude*.

Though, in his Sentiment, *Perception* and *Idea* differ much between themselves. For *Perception*, is the Mode or Affection of a conceiving Mind, which, consequently, is peculiar to every Mind, and is sometimes the inward and confus'd Sense, or *Conscience*. But *Idea* is common to all: For not only, says he, the *Europeans* see with their Mind, or conceive an immense Extension, and diffused, *in infinitum*, throughout those Spaces, called by some *imaginary*, but the *Asiatics*, likewise, the *Africans*, and *Americans*, have the same clear and distinct Idea; and all can, in that Idea, distinguish different Figures, different Motions, &c. and all know, that the lesser of that Extension is contained in the greater, &c. And as the Perception, or Mode of the human Mind, does not contain in itself that immense Extension, and can be formed into a Circle, Triangle, or any other Figure of that Kind; it seems necessary, that he should see that Extension, and all the Properties thereof, in some Original or Light, common to all Men, i. e. in that *archetypal Idea*, which is shewn to all Men, and in which Men see whatever they conceive clearly and distinctly. But what is that Original or *archetypal Idea*, but God himself, as far as the Creatures can in some Measure partake of him, and he contains them all, *eminently*.—Therefore we see in God an immense Extension, and consequently all Bodies.

If Men conceive, that Extension within themselves, and with their Eyes shut, they'll conceive it every where *homogeneous*, or of the same Sort. But if they open their Eyes, they'll discover in it a very great Diversity; for one Part thereof will affect them in one Manner, and another Part, in another Manner, *viz.* they'll perceive a greater Strength of Light in the Sun, than in the Moon; and will be touched by the different Perceptions of Colours, Sounds, Smells, Tastes, and other sensible Qualities, according to the Presence of the different Bodies. And every Man has his own proper Perceptions, or those which tho' agreeable to some, are disagreeable to others; but the Idea of Body and of Extension, is a certain Original, or Model common to all Men, for all conceive Extension in the same Manner, can draw the same Figures in it, and understand semblable Motions.

It is objected, that there is no Extension in God, since he is not corporal; therefore he cannot represent to us a Model of Extension.

I answer, that there is no Extension in God, *formally*, but there is *eminently*. For God is not extended, and does not occupy a Place; but as God, notwithstanding, is a simple Being, a Being by Essence, from whom flows necessarily all that exists, all the other Beings must be contain'd in him, either formally or eminently. Therefore, as all the Bodies which exist, have been produced by him, they must be contain'd in him in an intelligible Manner, at least, i. e. according to an *intelligible Extension*, not according to a local one; and consequently God can represent them to us, either immediately, or by Means of some Motions of the Bodies.

The third Manner of Perception by Conscience.

The human Soul knows itself, according to the same Author, its Thoughts, and Affections, *viz.* Joy, Sorrow, and all the Sensations of Light, Colour, Sound,

Smell, &c. by *Conscience*. For we do not know in what Manner the human Soul must be affected with the Sense of Joy, Sorrow, or Heat, as we see clearly which must be the Disposition of the Body, to be round, square, or of any other Figure: Because we see the Essence of the Body in the Archetype, or God; and have but a confus'd Sense of our Soul, whereby we are conscious to ourselves, that it exists and thinks; and that therefore it is of a Nature different from that of the Body: Notwithstanding which, we do not know clearly and distinctly its Nature and Properties.

Others, whose Sentiment is not very different from mine, believe, that the Nature of our Soul is understood in the general Idea of a Being, in which the Souls, as well as the Bodies, are contained. For as God is a Being by Essence, and can be partaken by the Creatures in several Manners; he illuminates our Mind in such a Manner, that it supplies us with the Idea of a Being in general, and of the Species and Modes of that Being. For though the human Soul knows itself by that Idea, it does not seem, notwithstanding, to know otherwise than by *Conscience*, or a confus'd Sense, its Affections, *viz.* Joy, Sorrow, &c.

The fourth Manner of Perception by Conjecture.

The same Author imagines, that we know the Nature of the other created Minds, whether angelical or human, by *Conjecture*. For as we do not see them, neither in themselves, nor in clear Ideas, and cannot discover by *Conscience*, what passes in them, there is but one Expedient left, which is to suppose them such in themselves, as we are conscious to ourselves we are, which if true, it follows:

That the *adventitious Ideas*, are either vain, false, or confus'd.

For, 1. If they be taken for the Affections of the Soul, excited occasionally by the Motions of the Body, they are not properly Ideas, since they properly represent nothing, *v. g.* the Affection, whereby the Soul is made sensible of Heat, Cold, Sound, or of the other Qualities, represents properly nothing: But is only a certain inward Sense, whereby the human Soul feels confus'dly something in itself.

2. If they be taken for the Qualities themselves objectively perceived, they are false or confuse; false, inasmuch as they do not represent what is in the Bodies; confuse, in that they confound the formal Idea, which is the *Perception* itself, with what is in the Things, tho' there be no Resemblance between the corporal Qualities, and the Sense they have excited.—Therefore the *adventitious Ideas* are either vain, false, or confuse.

The *falsitious Ideas*, are either composed of the innate Ideas, or are produced of the Union of an inward Sense with a clear Idea. But that Union is not made by our Understanding, since it seems to be rather passive than active; but is made in our Understanding, either on Occasion of the disturbed Motion of the animal Spirits, as it happens in those who have a Fever, or by an Act of the Will, as when, *v. gr.* the Will together with the Idea of Extension, which is present to our Mind, determinates that Motion of the animal Spirits, whereby the Sense of yellow or gold-colour is excited, in which Case we imagine a golden Mountain; or when we join the Idea of a human Head, with the Idea of the Body of a Fish, to imagine, &c. in all these Things it is necessary that either the Motion of the animal Spirits, or the Act of the Will should interfere, whereby that Composition may be determined either mediately or immediately; in which occurs sometimes a tacit Judgment, whereby we judge, that a Thing, tho' it does not exist actually, can exist at least.

Thus far of the Manner whereby the Essences of Things are known. At present I must explain, how we discover their Existence.

We understand, that God's Existence is contained in the clear Idea of him, which, as far as he illuminates our Mind, is not distinct from him. For the Existence, which is a Perfection, is understood to be contained in the Idea of a Being sovereignly perfect.

We are sure of the Existence of our Soul, by a certain inward Sense, whereby she is conscious to herself of her Thoughts: For we cannot think without being conscious

conscious to ourselves that we think, and consequently exist. Hence this Principle, *I think; then I exist.* And though, according to the Author *Of the Enquiry after Truth*, our Soul has a less clear Knowledge of her Essence, than of that of the Body, she is notwithstanding more certain of her Existence than of that of the Body, viz. though she be entirely conscious to herself, that she exists; she can nevertheless still doubt of the Existence of the Body.

We know the Existence of spiritual or human Souls, distinct from ours, by the Effects, which we suppose produced by them.

We know the Existence of corporal Things, and that they are indued with certain Qualities, by some Impressions, whereby, as occasionally, some Affections, or vivid Sensations, are constantly excited in our Mind.

We may form the same Judgment of all the others we do of the Sun; which we know to exist, and to be luminous and hot, by the Impression of the Light or of Heat, or of its other Qualities, whereby are excited in our Soul constantly, occasionally, and always in the same Manner, some certain Affections, or vivid Sensations: Therefore we know the Existence of the corporal Things, and that they are indued with certain Qualities, by some Impressions, &c.

COROLLARY.

From what I have said on this Subject, we may judge of the Origin of all Ideas. For they all proceed from God, either immediately, or mediately by means of corporal Motions; and are excited in the Soul, or intellectual Faculty; at present it remains to add to it some Reflections on *Reason*, *Phantasy*, and *Memory*, which are Faculties nearly related to the Understanding.

MEMORY, in Man, is a Faculty of the rational Soul, or human Mind, whereby we remember Things which we have formerly learned; and is nothing else but the human Mind itself, as determined on Occasion of the Vestiges remaining in the Brain, and of the Motions of the animal Spirits running through those Vestiges to a certain Perception of Things.

PHANTASY, is a Faculty whereby the human Mind sees corporal Things, under corporal Figures or Images: Or is rather the Mind itself, or rational Soul, excited by the Vestiges imprinted in the Brain, and the Motion of the animal Spirits flowing through those Vestiges, to know something corporal under a corporal Figure.

Lastly, REASON, in this Place is the Faculty of Reasoning; or to infer rightly one Thing from another, and therefore includes both the Understanding and Will.

5. *Touching the human Will and Liberty.*—Will is called a Faculty of the human Soul, and is commonly defined in the Schools, a Faculty which prosecutes the Good offered by the Understanding, and is averse to Evil: Or is the Mind itself, inclining towards Good, and avoiding Evil: For it is not an Entity really distinct from the Soul; but as the human Mind, considered as Understanding, is called *Intellect* likewise, when considered as willing, it is called *Volunté* or *Will*. Therefore *Will* in the Schools is improperly called blind: For a Faculty, which is in fact one and the same Thing with the knowing Faculty, as Will is in fact one and the same Thing with the knowing Faculty, or Understanding, cannot be properly called *blind*; for there is no Difference between them both but in the Appellation, since they are both one and the same Soul.

But as, notwithstanding Perception is different from Volition, and that the Soul by the Will does not prosecute or avoid a Thing, till it has a previous confuse Knowledge of that Thing; hence the Perception of the Understanding is said to be previous to the Motion of the Will, or as they speak in the Schools, the Understanding is conceived to present a lighted Torch to the Voluntary. Notwithstanding which, the human Will cannot be called *blind*, since a blind Faculty cannot follow a lighted Torch.

As the Understanding by its natural Light, can discover as well the Being in general, as the Mode or Accident of the Being; the Will likewise has a natural Propensity towards Good in general, i. e. towards God himself, implicitly, if not explicitly known. Again, as

the Perception of a particular Thing seems to be nothing else but a certain Determination of the human Light; whereby we know universally the Being itself, or God: Likewise the Propensity of the Will towards particular Goods, is a certain general Determination of that Inclination, or a Restriction whereby it adheres to that same particular Good.

From that Amplitude of the Will, whereby it prosecutes Good in general, and can be satiated by the incommutable and infinite Good alone, seems to proceed Indifference towards private Goods, whence it happens that it never adheres necessarily to them. But I must explain in a clearer Manner, what is that Indifference of the Will, otherwise called Liberty.

HUMAN LIBERTY.

Human Liberty, as considered here by us, seems to be nothing else but the Will itself, as free from an external, and sometimes an internal Necessity, in prosecuting Good and avoiding Evil. For in this present Subject we commonly distinguish two Sorts of Necessities, viz. an external Necessity, called *Coaction*; and an internal one, which is a certain natural and necessary Propensity towards Good, and an Aversion from Evil. Therefore there are two Sorts of Liberty, one from Coaction, and the other from Necessity.

Liberty from Coaction, is the human Will being free from external Violence, as well in prosecuting Good, as in avoiding Evil; and we call external Violence or *Coaction*, that which is offered to Somebody, by an external Principle, against his Inclination; as when any Body is carried to the Supplice.

Where it must be observed, that no Violence can be offered to the Will, with regard to its interior and proper Acts, v. gr. with regard to Love or Hatred; for one cannot be forced to love against his own proper Inclination, otherwise he should love and not love the same Thing; he should will and not will together; or should will unwilling, and in Spite of himself, which involves a Repugnance: But the Will, notwithstanding, can suffer that Violence with regard to exterior and corporal Motions, which it excites in the Body, as an occasional Cause: v. gr. a Person can be hindered from pursuing a Journey in Spite of himself, or be forced to stir or walk, when he would repose himself.

Whence it appears, that the Will is always free from Coaction, with regard to proper and inward Acts; or, what is the same, that all voluntary Acts are always free from Coaction; because done freely, and proceeds from the Will, without any external Violence; but, notwithstanding, it is not always free from a natural Necessity. Therefore,

Liberty from a natural Necessity, called also *Free-Will*, or *Liberty of Election*, is that which excludes all Sort of Necessity, as well external as internal. Internal Necessity, or Necessity of natural Inclination, is a certain Propensity of the Will to pursue necessarily Good, and to avoid necessarily Evil. Whence we are not free of a natural and inward Necessity towards the Love of Good, and the Hatred of Evil in general. For it is impossible we should not love Good in general, or our Felicity, and hate Evil or Misery.

But our Will is not necessarily engaged to love private Goods; therefore we have a free Power to chuse them, or prefer one or several of them to the rest; and if there be but one we may take it or leave it; which cannot be understood without some Indifference.

But as all Philosophers confess that Free-Will is placed in the Will, it must appear surprizing, that in the Schools Judgment, which is the same as Free-Will, is commonly attributed to the Understanding, not to the Will. But as we design to follow the Truth in this, as we do in all other Things, as near as we can, we'll shew, that Judgment properly belongs to the Will, and that it is always voluntary, since Perception is sometimes excited within us against the Inclination of our Will; let it be therefore,

That Judgment belongs to the Will, not to the Understanding, since it is an Act of the Will; it being the Affirmation of Truth, or the Negation of Falshood; or is an Assent or Dissent, whereby it approves or disapproves something; or whereby it inclines either toward the

the Affirmative, or the Negative Part, according as the Idea is consentaneous or dissentaneous.

Though *Perception* be excited in our Mind, even in Spite of ourselves, all Judgment, notwithstanding, is always voluntary; because it always proceeds from a free Determination or Election. For either the Connection of the Subject and of the Attribute is evident: And then the Will is freely determined towards Affirmation or Negation, though it judges necessarily, and not of a free Determination: Or that Connexion is a little more obscure, and then the Will affirms or denies, by a Choice, or of a free Determination; as it happens in *temerarious Judgments*; therefore all Judgment is always voluntary.

Sometimes our Judgment is free of a *Liberty of Election*, which excludes all Sorts of Necessity, external as well as internal and natural. Because it can be carried or not carried at Pleasure; since there is neither a clear, nor a necessary Connection of the Attribute with the Subject; therefore *temerarious Judgments* are forbidden, and condemn'd as *free*, and put in our Power.

As to the *sensitive Appetite*. — The Will consider'd as inclining towards a sensible Good, and avoiding Evil, by the Occasion of the corporal Motions, is called *sensitive Appetite*; and is subdivided into *concupiscive*, and *irascive Appetite*. Therefore when any Body desires something, without a corporal Motion, it is the Will: If occasioned by the Motions of the Body, and particularly with a violent Commotion, it is called *sensitive Appetite*, which is either *concupiscive* or *irascive*.

6. *Touching the natural Habits of the human Soul*. — The natural Habits of the Soul, depends likewise for the greatest Part on the Soul itself, and for that Reason, do not seem to belong more to *Metaphysick* than to *Physick*: Notwithstanding which, I believe that it is very proper to treat in this Place, at least of the spiritual Habits, since the Essence, the Faculties, and Habits, follow immediately one another.

HABIT, therefore, can be defined, according to the Doctrine of *Aristotle*, *lib. 2. Ethic. c. 4. and libr. Categor. c. de qualit. A Quality of the first Species happening to the Power, and assisting it to operate.*

It is called a *Quality of the first Species*; because *Aristotle* distinguishes four Sorts of Qualities, of two Members each, *viz. Habit and Disposition; Natural Power and Impotency, &c.*

It is added, *happening to the Power*, because we have it not naturally, unless it be with Regard to Inchoation. But it is either infused by God, or acquired by repeated Acts.

Lastly it is said, *which assists the Power to operate*; because by the Succours of the Habit, we operate easier, quicker, and with more Pleasure.

Of *Habits*, some are supernatural, *viz. those which God infuses within us without us*; wherefore they are called infused, as *Faith, Hope, and Charity*, of which I don't treat in this Place: And other natural, which are acquired by repeated Acts; whence they are also called acquired. Therefore an *acquired Habit* can be defined a *Facility of acting acquir'd by repeated Acts*.

That acquir'd Habit, is either called *spiritual*, when it *assists a spiritual Faculty*; though, by Reason of its Entity, it pertains for the greatest Part, to the Body, as we'll see by and by: Or is called *corporal*, if it *determines the corporal Faculty to act*. Both are either good, and called *Virtue*, or bad, and called *Vice*.

Again, the *spiritual Habit*, is either called *intellectual* or *moral*.

That is called *intellectual*, which *assists the Intelligence and Knowledge of the Mind*; and therefore regards the Understanding; because Perception or Knowledge, which is the primary Part of those Sorts of Habits, belongs to the Understanding. *Aristotle*, *lib. 6. Ethic. c. 3.* reckons five of those *intellectual Habits*, *viz. Intelligence, Wisdom, Science, Prudence, and Art*, and these Habits being good, are called *Virtues of the Mind*; but Error and Heresy are called *Vices of the Mind*. — Lastly, *Opinion*, which is deduced from a probable Reason, and *human Faith*, which is entirely founded on Man's Authority and Testimony, are called *indifferent Habits*.

Moral Habit inclines the Will, either to moral Good or moral Evil. If it inclines it to Good, it is called moral Virtue; if to Evil or Sin, it is called moral Evil.

As I have observed in my Treatise of *Ethicks*.

We must, at present, explain in few Words, in what the Nature of spiritual Habits consists. Which to execute, with more Facility, we must remember what has been heretofore so often inculcated, *viz. that our Mind is occasionally determin'd, by the corporal Motions, according to the Law established by the Creator, as vicissim, the Motions of the Body are, occasionally, excited by the Thought*. For the Society of the Body and Mind is such, that there is no Thought but that it is immediately follow'd by some Motion of the animal Spirits, as no Motion happens in the Brain, without procuring some Thought in the Mind. For all the Motion of the human Body is accomplished by the Circulation of the animal Spirits, as I have sufficiently proved in my Treatise of *Anatomy*. Which animal Spirits are nothing else, but the most subtile, and pure Portion of the Blood, which being purified in the Ventricles of the Brain, enters the Nerves, and through them are carried to all the Parts of the Body.

Therefore, as, on Occasion of some Thoughts, those animal Spirits are oftener carried to some Parts of the Body than to others, they render the Channels, through which they pass and repass, wider, whereby the same Thoughts are often repeated. Hence,

The intellectual Habits, such as *Sciences*, are not mere spiritual Qualities inherent to the Mind; but consist, for the greatest Part, in the *Vestigia*, imprinted in the Brain, after all the Obstacles which could retard the Circulation of the animal Spirits, have been removed. Because if the *intellectual Habits* were mere spiritual Qualities, inherent to the Mind, they would be either some Affections only, or Dispositions, or Modifications of the human Mind; or would be some spiritual Entities, adventitious to the Mind, and received in it, as it is imagined in the Schools. But they are neither Affections or spiritual Modifications; nor Entities superadded to the human Soul, and as *implanted* in it.

1. They are Affections only, or Dispositions of the human Mind. Because a simple Affection of the Mind, or a Disposition, does not seem capable to contain a whole Science, which consists of several Parts, and because also the Affection of the Mind, which is spiritual, cannot be obliterated by the Violence of a Malady, nor by Length of Time, as we see daily a Science entirely defaced or obliterated; since neither a Malady can affect the Soul, nor a spiritual Thing be corrupted.

2. Neither are they Entities superadded to the Soul. For those who pretend that the intellectual Habits are Entities superadded to the Soul, understand by those Entities, *Species* produced by the Action of the Understanding, as certain Terms, as they call them, of a vital Action or Thought, or the Effects remaining after the Thought. For a created Understanding cannot produce Entities from nothing, which is the Property of God alone. Our Understanding, besides, being only passive, not active. — Lastly, if the intellectual Habits were Entities inherent to the Mind; it would follow hence, that they could exist without the Mind; which is an Absurdity; for no Body has ever pretended yet, that Science or Wisdom can subsist without the Mind. Therefore the *intellectual Habits*, such as the Sciences, are not mere spiritual Qualities inherent to the Soul.

But they are a Facility of thinking of Things, which we have already conceived, and to treat again of Things we have already treated: Which Facility consists, for the greatest Part, in the *Vestigia* imprinted in the Brain, by the Removal of all the Obstacles which could obstruct the Passage of the animal Spirits: For the Circulation or Motion of those Spirits have so strict an Union with the Thoughts of the Soul, that they always offer themselves together; and the more distinct are those Vestiges traced in the Brain, the more distinct and clear are the Motions of the Spirits; and our Notions become more distinct and clear. Therefore, the *intellectual Habits*, such as the Sciences, consist for the greatest Part in the Vestiges traced in the Brain.

COROLLARY.

The *intellectual Habits*, besides the Knowledge of the Soul, which is their more excellent Part, include the corporal Affections, which determine as occasionally that

that Knowledge: And therefore Man by the intellectual Habits, which he has acquired by Labour and Study, has gain'd that Right on certain Things granted him by God, as a Reward for his Industry, that when he will reflect on them he presently understands them.

Moral Habits, as Justice, Injustice, Temperance, Intemperance, &c. besides the Disposition of the Soul itself, or Will, which is the superior Part of a moral Habit, require a certain Facility of acting, which consists in the Motion of the Spirits, and the Disposition of the Body. For *moral Habits* are those which incline the Will to Good or Evil, as Justice and Injustice, Temperance and Intemperance, &c. which Habits, besides the good or bad Quality of the Mind, viz. a constant Love of Order, if the Habit be good, or an Aversion to Order, if bad, require a certain Facility of acting, which is placed in the Motion of the Spirits and the Dispositions of the Body. For the Will is naturally enough determined to act, by the sole Perception of the Understanding, and suffers no Delay in its Actions, but from corporal Affections or Motions: Whence that Resistance only proceeding from the Body, is to be conquered, and that by a contrary Affection of the Body, which is placed in the Motion of the Spirits.

COROLLARY I.

By all these it can be very well understood, that the effectrice Causes of natural Habits, even spiritual ones, can be called repeated Acts, or rather the animal Spirits, inasmuch as determinated by repeated Acts, they force their Way through, and imprint deeper Vestiges in the Mind: For that is the effective Cause, at least occasional, of a natural Habit, by which that natural Habit is produced, at least occasionally; but a natural Habit, even a spiritual one, is produced by the animal Spirits, at least occasionally, inasmuch as those Spirits determinated by repeated Acts, force their Way through, and imprint deeper Vestiges in the Brain: Therefore, &c.

COROLLARY II.

A natural Habit, can scarce be acquired by a single Act; for a natural Habit, is the Facility of acting established in the Vestiges imprinted in the Brain, and in a free Motion of the Spirits, which is durable and not momentaneous; which Facility cannot be acquired by a single Act, since by that single Act the Vestiges are not imprinted deep enough; neither can the Meatus of the Spirits be enough dilated, for the Removal of all the Obstacles they could meet with to obstruct their Passage; unless, perhaps, the Substance of the Brain be very soft, in which Case the Habit would be as easily obliterated or defaced, as it had been imprinted: Therefore no Habit is properly generated, since it must continue, and consequently requires some Solidity in the Brain; therefore it does not seem that a natural Habit can be acquired by a single Act.

COROLLARY III.

All the natural Habits are increased, perfected, and confirmed, by a deeper Impression of the Vestiges in the Brain, by wider Meats, and a very free Motion of the animal Spirits.

COROLLARY IV.

The natural Habits are weakened, or diminished by Causes contrary to those whereby they are commonly increased, or receive an Addition of Perfection or Strength, viz. when the Vestiges imprinted in the Brain are obliterated by degrees, or the Canals of the animal Spirits are obstructed or contracted. If those Vestiges be quite defaced, or the Meats entirely

stopped, then the Habits perish entirely.

Note, That the first who wrote professedly on the Subject of *Metaphysicks*, is *Aristotle*. Indeed he is the first who uses the Word; *Meta τα φυσικα*, is the Title of one of his Books, which some of his Commentators will have to signify no more, than *after the Books of Physicks*. *M. du Hamel* taking the Preposition *meta* in the Sense of *post*, is even of Opinion that the Word was coined by *Aristotle's* Disciples; and that the Word was unknown to *Aristotle*: Which is also my Sentiment, i. e. that it was invented by *Aristotle's* Interpreters, *Alexander Aphradisus* and *John Philoponus*; but for what Reason it was effected, *Strabo* takes Notice, lib. 13. of his *Geography*, in the Description of *Troades* (where he mentions the Town *Scepsis* which was the native Place of the Philosopher *Neleus*). That *Aristotle* (who was the first who composed a Library of the Books he had collected) left that Library to his Disciple *Theophrastus*, together with his School. That *Theophrastus* bequeathed, likewise, by his Testament, his Books, and those of *Aristotle*, to *Neleus Scepsius*, who had been one of *Aristotle's* Disciples. *Neleus*, therefore, transferred that Library into *Scepsis*, and left it, at his Death, to very ignorant Heirs. And these having learn'd that a Research was made, every where, of Books to compose the Library of *Pergama*, they hid theirs under Ground, for fear they should have been taken away from them; where they were left, for a very considerable Time, in some Measure buried. At last having been dug up by their Successors, in Part tore and rotten, they were sold to *Apellico Teio*, for a large Sum of Money; who having in some Measure repair'd the Parts which were defective, caused them to be copied, notwithstanding which they were left full of *Laccuna*, to the great Displeasure of the *Peripateticians*, who used to read them. But soon after *Apellico's* Death, his Library having been taken by *Scylla*, was transported to *Rome*; where a certain Grammarian, called *Tyrannius*, asked, that he should be permitted the Use of *Aristotle's* Books, which having obtain'd, he changed several Things in them himself, and communicated the Original to a certain *Rhodian*, called *Andronicus*, who, in all Likelihood, made also some Interpolations in them, after which they were published. And those which pertain to Logick, Physick, and to other Faculties, having been digested into Order, the rest, between which there was no Connection, and belonged to no Subject in particular, were placed after the Physick; whence it is that they were called Books of *Metaphysick*, as much as to say, placed after the Physick.

Therefore, it is evident, that the Books of *Metaphysicks*, had been more spoiled than any of the others; which is the Reason why they are not written with the same Care and Caution as the others are. For, as *Gassendi* observes, lib. 1. *advers. Aristot. acercit. 5. num. 11.* As all the Books of Physick are design'd to explain the material Substance; the fourteen Books of *Metaphysick*, were certainly design'd to treat of the immaterial Substance; but has it been done? Though those Books contain 141 Chapters, none but the five last of the twelfth Book, have something of that Matter. Therefore there's nothing less accurate, or perfect, than *Aristotle's* *Metaphysick*; because, perhaps, the best Part thereof is lost; and we have nothing left but the smallest Part, and that besides mutilated and imperfect.

F. Malebranche and *Mr. Locke* have wrote much more clearly, and consistently of *Metaphysicks*, than any of the Antients.

METEOROLOG Y.

METEOROLOGY, is the Doctrine of Meteors; explaining their Origin, Formation, Kinds, Phenomena, &c.

METEOR, is an imperfect Mixt, consisting of subli-

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mated Exhalations, and formed in the superior Region of the Air, or of our Atmosphere.

There are three Kinds of Meteors, viz. igneous, or fiery; aerial, or airy; and aqueous, or watery Meteors.

Igneous, or fiery METEORS, such as *Lightning*, *Thunder*, *Ignis fatuus*, *Draco volans*, *falling Stars*, and the like, seem to be nothing else but sulphurous and nitrous Exhalations, set on Fire in the Air, by the violent Motion of the Parts. Therefore, the Matter of *Thunder* and *Lightning*, as well as that of Gunpowder, is particularly Nitre and Sulphur: The Effects of both being entirely semblable. For the hollow Cloud, wherein the sulphurous and nitrous Exhalation is contained, is like the Cannon, and the Exhalation like the Gunpowder; which, when it lacerates the Cloud, produces *Thunder* and *Lightning*. *Thunder*, according to the Manner the Matter kindled, falls on the Earth; whether in a direct or oblique Line: And *Lightning* or Fulguration, when it blazes through the Air; but it cannot break the Cloud, with a great Violence, without making a very great Noise: For *Thunder* is a Sound, occasioned by a violent Commotion of the subtile Matter, issuing out of a lacerated Cloud.

The sulphurous and nitrous Matter is set on Fire, if we believe *Des Cartes*, *Dissert. I. Meteor.* when the superior Cloud being resolved into Water by the Heat of the Air, falls on the Inferior; so that the two Extremities thereof reach sooner the inferior Cloud than its middle Part; for then the Air, intercepted between the two Clouds together, with the sulphurous and nitrous Exhalations, is pressed by the sudden Fall of the superior Cloud, and by its elastick Virtue, lacerates the inferior Cloud, either in its lower Part, or at its Sides, and being forced out, with great Impetuosity, together with those sulphurous and nitrous Exhalations, produces that violent Noise called *Thunder*. Just in the same Manner, as if one was to place the Leaf of a Tree upon the Thumb and the Index, keeping his Hand half shut, so that half of the Leaf contained within the hollow of the Hand be a little bowed; then with the other Hand strike the Leaf with a great Force, it will excite a great Noise, because of the Elasticity of the Air pressed, whereby the Leaf is lacerated, in its lower Part. The Exhalations pressed within the narrow Compass of the Clouds, do not only produce a Sound, but likewise a Coruscation, or Light to the Eyes, because they are nitrous and sulphurous Exhalations sublimated by the Matter of the first Element, which suddenly penetrate the inferior Cloud: Hence they lacerate the Cloud with a greater Violence, and move more powerfully the adjacent Air, as it happens in Muskets. For, as if one breaks a Leaf in the Manner abovementioned, or discharge a Musket, near a Forest or Wood, the Sound produced, by a single Blow, or a single Discharge, being echoed by the Forest, rowl longer thro' it, than if it had been done in another Place: Likewise the larger and thicker is the Cloud, though there be but one Clap of *Thunder*, the Sound notwithstanding continues to rowl longer through the Cloud; and is not heard by those who are at a great Distance from the Place where the Cloud is broken, but a long while after the *Lightning* has been seen: For the Sound is propagated by Succession only, and runs twenty-eight Feet within the Time of a Second.

Therefore if the *Lightning* is seen long before the Sound is heard, the *Thunder* is not dangerous; but if we see the *Lightning* and hear the Sound, at one and the same Time, the Matter has been set on Fire very near us, and consequently the *Thunder* is dangerous. Though he that sees the *Lightning* and hears the *Thunder* is seldom hurt by it. Sometimes notwithstanding, the Ball of Fire being formed of a more tenacious Matter, is seen to fall on the Ground, and rowl for a considerable Time from one Place to another, whereby Men and Beasts are often killed; sometimes Houses and Trees are thrown down, and other surprizing Effects produced, according as the *Thunder* is agitated by the Wind, or reflected by obvious Bodies.

When the superior Cloud falling on the inferior excites the *Thunder* or *Lightning*, presently follows a Shower of Rain; because the superior Cloud does not fall on the inferior, till its heavier Particles have been dissolved into Water; and also because the inferior Cloud pressed by the superior falls downwards, and in falling is resolved into Water. Hence the Cloud is almost always resolved into Water when it thunders.

But when those Clouds in their Fall meet with some exalted Places, as Rocks, Towers, Steeples, &c. then the Cloud being divided into several Parts by that encounter, hover over that Place, whereby the Irruption of the *Thunder* is facilitated. Hence exalted or high Places, are oftner stricken with *Thunder* than lower ones: The same Thing happens in the ringing of Bells; for if their Sound, which we think consists in the Agitation of the Air, be stronger and louder, it violently agitates that Part of the Cloud which is over the Steeple where those Bells are ranged; whence the Cloud attenuated in that Place breaks after, and procures thereby an easy Passage to the *Thunder*, that it may fall on the Steeple, to the great Danger of the Ringers. Therefore the Sound of the Bells is only of some Utility when the *Thunder* is yet at some Distance; but when it is heard near the Steeple, it is then very dangerous to ring the Bells.

Sir *Isaac Newton* is of Opinion, that *Thunder* is not occasioned by the falling of Clouds, but by the kindling of sulphurous Exhalations, in the same Manner as the Noise of *Aurum fulminans*.

He says, that there are sulphurous Exhalations, always ascending into the Air when the Earth is dry; there they ferment with the nitrous Acids, and sometimes taking Fire, generate *Thunder*, *Lightning*, &c.

That besides the Vapours raised from Water, &c. there are also Exhalations carry'd off from Sulphur, Bitumen, volatile Salts, &c. is past all Doubt; the vast Quantity of sulphurous and bituminous Matter all over the Surface of the Earth, and the volatile Salts of Plants and Animals, afford such an ample Stock thereof, that it is no Wonder the Air should be filled with such Particles (say those who espouse Sir *Isaac's* Opinion) raised higher or lower, according to their greater or lesser Degree of Subtlety and Activity, and more copiously spread in this or that Quarter, according to the Direction of the Winds, &c.

Dr. *Wallis*, who inclines much toward the first System I have established of *Thunder*, thinks that the Effects of *Thunder* are so like those of fired Gunpowder, that we need not scruple to ascribe them to the same Cause; but that the principal Ingredients in Gunpowder, we know, are Nitre and Sulphur; Charcoal only serving to keep the Parts separate, for the better kindling.

Hence, if we conceive in the Air a convenient Mixture of nitrous and sulphurous Particles, from the Sources abovementioned; and those, by any Cause, to be set on Fire, such Explosion may well follow: And with such Noise and Light, as in the Firing of Gunpowder; and being once kindled, it will run from Place to Place, this Way or that, as the Exhalations happen to lead to it; much as is found in a Train of Gunpowder.

This Explosion, if high in the Air, and remote from us, will do no Mischief; but if near us, may destroy Trees, Animals, &c. as Gunpowder would do in the like Circumstances.

This Nearness, or Farness, may be estimated, say they, by the Interval of Time between the Flash and the Noise, which we have said to be our Sentiment likewise. Dr. *Wallis* observes, that ordinarily the Difference between the two is about seven Seconds; which, at the Rate of 1142 Feet in a Second of Time, gives the Distance about a Mile and a half: But sometimes it comes in a Second or two, which argues the Explosion very near us, and even among us; and in such Cases, the Reverend Doctor assures us, he has more than once foretold the Mischief that befel.

Upon the whole, that there is in *Lightning* a sulphurous Vapour, appears from the Sulphur which attends it, and from the sultry Heat in the Air, which usually precedes; and that there is a nitrous Vapour along with it. The same Author concludes hence, that we know of no other Body so liable to a sudden and violent Explosion: And as to the kindling of these Materials, we know that a Mixture of Sulphur and Steel-Filings, with a little Water, will break forth into actual Flame. Nothing therefore is wanting to the Explosion, but some Chalybeat or vitriolick Vapour, and among the various Effluvia from the Earth, the Doctor does not doubt but there must be some of that.

But what he leaves as a Probability, we can produce a Proof of.

In History we meet with Instances of its raining Iron in Italy, and Iron Stones in Germany; *Jul. Scaliger* tells us, he had by him a Piece of Iron rain'd in Savoy. *Cardan* reports 1200 Stones to have fallen from Heaven, some of them weighing 30, some 40, and one 120 lb. all very hard, and of the Colour of Iron.

The Matter of Fact is so well attested, that Dr. *Lifter*, in the *Philosophical Transactions*, builds a whole Theory of Thunder and Lightning on it; maintaining that they both owe their Matter to the Breath or Exhalation of Pyrites.—That Rattling in the Noise of Thunder, which makes it seem as if it passed through Arches, or were broken variously, is doubtless owing to the Sound being excited among Clouds hanging over one another, and the agitated Air passing between them.

But these two last Sentiments are not, in my Opinion, very satisfactory, and do not explain accurately enough, all the Phænomena of Thunder; or rather they are but the first System, I have established, disguised under greater Difficulties, and divested of what it has the most clear, and the most proper to explain those Phænomena.

My own Sentiment.

What if we were to say, that Thunder consists in fact of the nitrous and sulphurous Vapours exalted from the Earth together with all the other Exhalations, which form the Clouds within our Atmosphere, or the lowest Region of the Air; but that these nitrous and sulphurous Vapours being separated from all the rest, sublimated, and drawn nearer the Sun by his Heat; remain suspended between that Congeries of the coarser Particles, which form the thick and lower Clouds, and some of a finer Texture, which have been exalted along with them, are interposed between them and the Sun; that on Proportion that Sublimature draws near to its Perfection, those thin Clouds interposed between the nitrous and sulphurous Exhalations, growing too weak to struggle against the continual and violent Agitation of the igneous Particles, and being deprived besides of the Supply they continually received from below, during the Operation, are soon dissipated, and the excessive Heat of the Sun, meeting no longer with that Obstacle, lays hold of the combustible Matter, and sets it on Fire; which Fire, by its natural Elasticity, tending continually towards extending further and further, rowls on the Clouds below, and by the Rapidity of its Motion, and the continual Conflict between the igneous Particles, and the aqueous ones of the Clouds it rowls upon, exalts new Vapours, which forming new Clouds, wherewith it is enveloped; and by the Efforts it makes to disengage itself and force its Way, causes that Noise we hear, which is louder, in Proportion the Clouds it breaks through, are thicker, and more condensed.

On this my System, may be accounted for some Phænomena of the Thunder, which without it remain unconceivable. For it may be said, that if it is often heard, and by shorter, or longer Intervals, before the Thunder falls, that proceeds from the smaller or greater Resistance the Thunder meets with from the Clouds it is environ'd with; for if they be thick, and much condensed, the Noise is louder in the Explosion, as we have already observed: If they make but a small Resistance, the Noise is but small; as a Pound of Powder ramm'd close in a Cannon, when set on Fire, makes more Noise than 100 lb. lighted, in a wider Space, where it meets with much less Resistance. Again, if the Noise is less frequent at one Time than at another, or rather, if the Intervals between every Clap are sometimes longer, and sometimes shorter, it proceeds from the Obstructions it meets with being more or less frequent; for the Clouds being more sublimated, and less loaded with terrestrial and aqueous Particles, in some Places than in others, the Thunder rowls with less Opposition, because it does not so soon exalt round itself other Clouds, by Reason of the Rarity of the Particles they must be formed with. Lastly, when the Clouds underneath, on which the Thunder rowls, are weaker and less condensed, than those exalted by the violent Agitation of the Thunder, around itself; in the Struggle the Thunder makes to dis-

engage itself, those Clouds underneath break; and the Thunder falls on the Earth.—This is my own System, which I submit to the Censure of the Learned.

If what we call Lightning, acts with extraordinary Violence, and breaks or shatters any Thing, it is called a Thunder-bolt, which the Vulgar, to fit it for such Effects, suppose to be a hard Body, and even a Stone. But some are of Opinion, that we need not have Recourse to a hard solid Body to account for the Effects commonly attributed to the Thunder-bolt, as will be evident to any one, who considers those of *Pulvis fulminans* and Gunpowder.

The Phænomena of the Thunder-bolt are, that it oftener strikes on high Places than on low: That it often burns People's Cloaths without touching their Bodies; as it happen'd to *Amurath IV.* Emperor of the *Turks*, who, while asleep, in an Afternoon, had his Shirt burnt by Thunder, and his Body not in the least touch'd: That it sometimes breaks their Bones without hurting their Flesh or their Cloaths: That it has even melted the Sword without injuring the Scabbard, &c.

Some account for the most surprizing of these Phænomena, by observing, that the Exhalations set on Fire, are very different from one another. That some, *e. gr.* coming nearest the Nature of Sulphur, may only yield a slight lambent Flame, which will only affect such Things as take Fire the soonest; and others, on the contrary, so subtile and penetrating, as to come near the Nature of volatile Salts or Aqua-fortis, which spare soft Bodies, and spend their whole Force on hard ones.

The Chevalier *De Louville*, of the *French Academy* of Sciences, accounts for some Effects of Thunder upon a new Principle: As to killing of Animals without burning or wounding them, it is naturally enough ascribed to the Sulphur, which falling near enough the Person, the Fumes thereof stop his Respiration.—As to Trees, Buildings, &c. split, or beaten down, there must be another Cause. *M. de Louville*, therefore, supposes, that when the Thunder is so high, its Flame is dissipated, before it arrives at the Earth: And that the Air being violently driven along by the impetuous Motion of the Flame, and of Consequence exceedingly condensed, becomes as it were a hard Body, capable of producing terrible Effects.

Places struck with Thunder-bolts, were held sacred among the Antients. *Nigidius* has a curious Treatise on the Thunder-bolt. *Marcilius Ficinus*, and some others, maintain, that Coral dissipates panick Fear, and keeps off Thunder-bolts and Hail. *Fortunat. Licetus* has endeavour'd to account for it physically. Father *Le Brun* proves very easily, that those Philosophers are mistaken.

Note, That on Medals the Thunder-bolt is sometimes found to accompany the Emperor's Heads, as that of *Augustus*. In which Case it is a Mark of Sovereignty, and of a Power equal with the Gods.

Appian informs us, that the Thunder-bolt was the principal Divinity of *Seleucia*; adding that it was adored even in his Time, with various Hymns and Ceremonies.

Ignis Fatuus, is a popular Meteor, chiefly seen in dark Nights, frequenting Meadows, Marshes, and other moist Places.—Known among the People by the Appellations, *Will with a Wisp*, and *Jack with a Lanthorn*. It seems to arise from a viscous Exhalation, which being kindled in the Air, reflects a Sort of thin Flame in the Dark without any sensible Heat. It is found flying along Rivers, Hedges, &c. by Reason it there meets with a Stream of Air to direct it.

Draco volans, is a fat, heterogeneous, earthy Meteor, appearing long and sinuous, something in the Shape of a flying Dragon. This Shape is supposed to arise from the hind Part of the Matter of this Meteor being fired with greater Impetuosity than what comes first out of the Cloud; and it is supposed the broken Parts of the Cloud, and the sulphurous Matter which adheres to them, forms the apparent Wings of this imaginary Dragon.

I omit speaking of the other igneous Meteors, as falling Stars, fiery Beams, and those called by the antient Navigators *Castor* and *Pollux*, or *Helen*; at present called by the *Italians*, *Sicilians*, *Spaniards*, *Portuguese*, and

and *French, St. Elen's Fire*; which, they say, follows after a Ship in its Course, and sometimes enters the Pump, and flops it.

The *aerial, or airy Meteors*, consist of flatulent and spirituous Exhalations; such are *Winds, Whirlwinds*, and *Hurricanes*.

WIND, is a sensible Agitation of the Air, whereby a large Quantity thereof flows out of one Place, or Region, into another.

As to the physical Cause of the *Wind*. — *Des Cartes, Robault, &c.* account for the *General Wind* from the diurnal Rotation of the Earth. The Atmosphere, say they, investing the Earth, and moving round it, that Part will perform its Circuit soonest, which has the smallest Circle to describe: The Air therefore, near the Equator, will require a somewhat longer Time to perform its Course in, from East to West, than that nearer the Poles. Thus as the Earth turns Eastward, the Particles of the Air near the Equinoctial, being exceeding light, are left behind; so that in respect to the Earth's Surface they move Westward, and become a constant earthly Wind.

This Opinion seems confirmed by this, that these Winds are found only between the Tropicks, in those Parallels of Latitude, where the diurnal Motion is swiftest. But the constant Calms in the *Atlantick Sea*, near the Equator, the westerly *Winds* near the Coast of *Guinea*, and the periodical westerly Monsoons, under the Equator, in the *Indian Sea*, declare the Insufficiency of this Hypothesis.

Besides, the Air being kept close to the Earth by the Principle of Gravity, would, in Time, acquire the same Degree of Velocity that the Earth's Surface moves with, as well in respect of the diurnal Rotation, as of the annual about the Sun, which is about thirty Times swifter.

Dr. *Halley* therefore substitutes another Cause, capable, says he, of a like constant Effect, not liable to the same Objections, but agreeable to the known Properties of the Elements of Water and Air, and the Laws of the Motion of fluid Bodies. Such a one is the Action of the Sun's Beams upon the Air and Water, as he passes every Day over the Ocean, considered together with the Quality of the Soil, and the Situation of the adjoining Continents.

According to the Laws of Statics, the Air which is less rarified or expanded by Heat, and consequently more ponderous, must have a Motion towards those Parts thereof which are more rarified, and less ponderous, to bring it to an Equilibrium; also the Presence of the Sun, continually shifting to the Westward, that Part towards which the Air tends, by reason of the Refraction made, by its greatest meridian Heat, is with him carried Westward, and consequently the Tendency of the whole Body of the lower Air is that Way.

Thus a general easterly *Wind* is formed, which being impressed upon the Air of a vast Ocean, the Parts impel one the other, and so keep moving till the next Return of the Sun, whereby so much of the Motion as was lost, is again restored; and thus the easterly *Wind* is made perpetual.

From this simple Principle it follows, that this easterly *Wind* should, on the North Side of the Equator, be to the Northward of the East, and in South Latitudes, to the Southward thereof; for near the Line the Air is much more rarified than at greater Distance from it, because the Sun is twice in a Year vertical there; and at no Time distant about $23\frac{1}{2}$ Degrees: At which Distance, the Heat being as the Line of the Angle of Incidence, is but little short of that of the perpendicular Ray; whereas under the Tropicks, though the Sun stays longer vertical, yet he is a long Time 47 Degrees off; which is a Kind of Winter, wherein the Air so cools, as that the Summer Heat cannot warm it to the same Degree with that under the Equator. Wherefore the Air towards the Northward and Southward being less rarified than that in the Middle, it follows, that from both Sides it ought to bend towards the Equator.

This Motion compounded with the former easterly *Wind*, accounts for all the Phenomena of the general Trade-Wind; which, if the whole Surface of the Globe was Sea, would undoubtedly blow quite round the

World, as they are found to do in the *Atlantick* and *Elhiopick* Oceans. But seeing so great Continents do interpose, and break the Continuity of the Oceans, Regard must be had to the Nature of the Soil, and the Position of the high Mountains, which are the two principal Causes of the Variation of the *Wind*, from the former general Use: For if a Country laying near the Sun, proves to be flat, sandy, and low Land, such as the Defarts of *Lybia* are usually reported to be; the Heat occasioned by the Reflections of the Sun's Beams, and the Retention thereof in the Sand, is incredible to those who have not felt it; whereby the Air being exceedingly rarified, it is necessary that the cooler and more dense Air should run thitherwards to restore the Equilibrium.

This is supposed to be the Cause why near the Coast of *Guinea* the *Wind* always sets in upon the Land, blowing Westerly instead of Easterly; there being sufficient Reason to believe, that the inland Parts of *Africa* are prodigious hot, since the Northern Borders thereof were so intemperate, as to give the Antients Cause to conclude, that all beyond the Tropicks was uninhabitable by Excess of Heat.

From the same Cause it happens, that there are so constant Calms in that same Part of the Ocean called the *Rains*; for this Tract being placed in the Middle, between the westerly *Wind* blowing at the Coast of *Guinea*, and the easterly Trade-Winds, blowing to the Westward thereof; the Tendency of the Air here, is indifferent to either, and so stands in Equilibrio between both: And the Weight of the incumbent Atmosphere, being diminished by the continual contrary *Winds* blowing from hence, is the Reason that the Air here holds not the copious Vapours it receives, but lets them fall in so frequent Rains.

But, as the cool and dense Air, by reason of its greater Gravity, presses upon the hot and rarified, it is demonstrable, that this latter must ascend in a continued Stream as fast as it rarifies; and that being ascended, it must disperse itself, to preserve the Equilibrium, that is, by a contrary Current, the upper Air must move from those Parts where the greatest Heat is; so by a Kind of Circulation the North-East Trade-Wind below will be attended with a South-West Wind above; and the South-East with a North-West above.

That this is more than a bare Conjecture, the Author and Defenders thereof pretend, that the almost instantaneous Change of the *Wind* to the opposite Point, which is frequently found in passing the Limits of the Trade-Winds, seem to assure us of; but that which above all confirms this Hypothesis, is the Phenomenon of the Monsoons, by this Means most easily solved, and without it hardly explicable.

Supposing therefore such Circulation as above, it is to be considered, that Northward of the *Indian Ocean*, there is every where Land within the usual Limits of the Latitude of 30 Deg. viz. *Arabia, Persia, India, &c.* which, for the same Reason of the *Mediterranean* Parts of *Africa*, are subject to insufferable Heats, when the Sun is to the North, passing nearly vertical; but yet are temperate enough, when the Sun is removed towards the other Tropick, because of a Ridge of Mountains at some Distance, within the Land, said to be frequently in Winter covered with Snow, over which the Air as it passes must be much chilled. Hence it happens, that the Air coming according to the general Rule, out of the North-East to the *Indian Sea*, is sometimes hotter, sometimes colder, than that which by this Circulation is returned out of the South-West; and by Consequence sometimes the under Current, a Wind is from the North-East, sometimes from the South-West.

That this has no other Cause, say they, is clear from the Times wherein these *Winds* set, viz. in *April*; when the Sun begins to warm these Countries to the North, the South-West Monsoon begin and blow during the Heats till *October*, when the Sun being retired, and all Things growing cooler northward, and the Heat increasing to the South, the North-East Winds enter and blow all the Winter till *April* again. And it is undoubtedly from the same Principle, that to the Southward of the Equator, in Part of the *Indian Ocean*, the

North-West Winds succeed the South-East, when the Sun draws near the Tropick of *Capricorn*.

But the Industry of some late Writers, having brought the Theory of the Production and Motion of Winds, to somewhat of a mathematical Demonstration; we shall here give it the Reader in that Form; therefore,

If the Spring of the Air being weakened in any Place, more than in the adjoining Places, a Wind will blow through the Place where the Diminution is. For, since the Air endeavours by its elastick Force to expand itself every Way, if the Force be less in one Place than another, the Nifus of the more against the less elastick, will be greater than the Nifus of the latter against the former. The less elastick Air therefore will resist with less Force, than it is urged by the more elastick; consequently the less elastick will be driven out of its Place, and the more elastick will succeed.

If now the Express of the Spring of the more elastick, above that of the less elastick Air, be such as to occasion a little Alteration in the Baroscope; the Motion both of the Air expelled, and that which succeeds it, will become sensible, *i. e.* there will be a *Wind*.

2. Hence, since the Spring of the Air increaseth, as the compressing Weight increaseth, and compressed Air is denser, than Air less compressed, all *Winds* blow into rarer Air, out of a Place filled with a denser.

3. Wherefore, since a denser Air is specifically heavier than a rarer; an extraordinary Lightness of the Air in any Place, must be attended with extraordinary *Winds* or Storms.

Now an extraordinary Fall of the Mercury in the Barometer, shewing an extraordinary Lightness of the Atmosphere, it is no Wonder if that foretels Storms.

4. If the Air be suddenly condensed in any Place, its Spring will be suddenly diminished: Hence, if this Diminution be great enough to affect the Barometer, there will be a *Wind* blow through the condensed Air.

5. But since it cannot be suddenly condensed, unless it has been much rarified before, there will a *Wind* blow through the Air as it cools, after having been violently heated.

6. In like Manner, if Air be suddenly rarified, its Spring is suddenly increased; wherefore it will flow through the contiguous Air, not acted on by the rarifying Force.—A *Wind*, therefore, will blow out of a Place, in which the Air is suddenly rarified: And on this Principle, in all Probability, it is, that,

7. Since the Sun's Power in rarifying the Air is notorious, it must necessarily have a great Influence on the Generation of *Winds*.

8. Most Caves are found to emit *Wind*, either more or less. The rising and changing of the *Wind* is determined experimentally, by means of Weathercocks placed a-top of Houses, &c. But these only indicate what passes about their own Height, or near the Surface of the Earth: *Wolfius* assures us, from Observations of several Years, that the higher *Winds* which drive the Clouds, are different from the lower ones, which move the Weather-cocks. And Mr. *Derham* observes something not unlike this.

The Author last mentioned relates, upon comparing several Series of Observations made of the *Winds* in divers Countries, *viz.* France, England, Italy, Switzerland, New-England, &c. that the *Winds* in those several Places seldom agree; but when they do it is commonly when they are strong, and of long Continuance in the same Quarter; and more, he thinks, in the Northerly and Easterly, than in other Points. Also, that a strong *Wind* in one Place, is oftentimes a weak one in another; or moderate, according as the Places are nearer, or more remote.

As to the Force and Velocity of *Wind*.—*Wind* being only Air in Motion, and Air being a Fluid subject to the Laws of other Fluids, its Force may be brought to a precise Computation; thus,—The Ratio of the specific Gravity of any other Fluid to that of the Air, together with the Space that Fluid, impelled by the Pressure of the Air, moves in any given Time, being given, we can determine the Space which the Air itself, acted on by the same Force, will move in the same Time; by this Rule:

1. As the specific Gravity of the Air is to that of

any other Fluid; so reciprocally is the Square of the Space which that Fluid, impelled by any Force, moves in any given Time to the Square of the Space, which the Air, by the same Impulse, will move in the same Time.

Supposing therefore, the Ratio of the specific Gravity of that other Fluid to that of the Air, to be $= b : c$; the Space described by the Fluid to be called S ; and that which the Air will describe by the same Impulse, x . The Rule gives us $x = \sqrt{b S^2 : c}$.

Hence, if we suppose Water impelled by the given Force, to move two Feet in a Second of Time, then will $S = 2$; and since the specific Gravity of Water to the Air is as 970 to 1, we shall have $b = 970$, and $c = 1$; consequently $x = \sqrt{970 \cdot 4} = \sqrt{3880} = 623$ Feet. The Velocity of the *Wind* therefore, to that of Water moved by the same Power, will be as 623 to 2, *i. e.* if Water moves two Feet in a Second, the *Wind* will fly 623 Feet.

2. Add, that $S = \sqrt{c x^2 : b}$, and therefore the Space any Fluid, impelled by any Impression, moves in any Time, is determined by finding a fourth Proportional to the two Numbers that express the Ratio of the specific Gravity, and the Square of the Space the *Wind* moves in, in the given Time. The square Root of that fourth Proportional is the Space required.

M. *Mariotte*, *e. gr.* found, by various Experiments, that a pretty strong *Wind* moves 24 Feet in a Second of Time; wherefore if the Space, which the Water, acted on by the same Force as the Air, will describe in the same Time, be required; then will $c = 1$, $x = 24$, $b = 970$; and we shall find $S = \sqrt{576 : 970} = \frac{24}{\sqrt{970}}$.

3. The Velocity of the *Wind* being given, to determine the Pressure required to produce that Velocity, we have this Rule:—The Space the *Wind* moves in one Second of Time, is to the Height a Fluid is to be raised in an empty Tube, in order to have a Pressure capable to produce that Velocity, in a Ratio compounded of the specific Gravity of the Fluid to that of the Air, and of Quadruple the Altitude a Body descends in the first Second of Time, to the aforesaid Space of the Air.

Suppose, *e. gr.* the Space the Air moves in a Second of Time, $a = 24$ Feet, or 288 Inches; call the Altitude of the third x , and the Ratio of Mercury to Air $b : c = 13580 : 1$, $d = 181$ Inches; x will be less than that Number by one Line, or $\frac{1}{16}$ of an Inch. And hence we see why a small, but sudden Change in the Barometer, is followed with violent *Winds*.

The Force of the *Wind*, determined experimentally by a peculiar Machine, called an *Anemometer*, Wind-Measurer; which being moved by means of Sails, like those of a Wind-Mill, raises a Weight, that still the higher it is raised, receding farther from the Centre of Motion, by sliding along an hollow Arm fitted on to the Axis of the Sails, becomes heavier and heavier, and presses more on the Arm, till being a Counterpoise to the Force of the *Wind* on the Sails, it stops the Motion thereof.—An Index, then fitted upon the same Axis, at right Angles with the Arm, by its rising or falling, points out the Strength of the *Wind*, on a Plane divided like a Dial-Plate into Degrees.

As to the Qualities and Effects of the *Wind*.—1. A *Wind* blowing from the Sea is always moist: In Summer it is cold, and in Winter warm, unless the Sea be frozen up. This is demonstrated thus; there is Vapour continually rising out of all Water (as appears even hence, that a Quantity of Water being left a little while in an open Vessel, is found sensibly diminished) but especially if it be exposed to the Sun's Rays; in which Case the Evaporation is beyond all Expectation. By this Means the Air incumbent on the Sea becomes impregnated with a deal of Vapour. But the *Winds* blowing from off the Sea, sweep these Vapours along with them; and consequently are always moist.

Again, Water in Summer, &c. conceives less Heat than terrestrial Bodies, exposed to the same Rays of the Sun; but in Winter Sea-Water is warmer than the Earth covered with Frost and Snow, &c. Wherefore as the Air, contiguous to any Body, is found to partake of its Heat and Cold, the Air contiguous to Sea-Water will be warmer in Winter and colder in Summer, than that

that contiguous to the Earth. Or thus; Vapours raised from Water by the Sun's Warmth in Winter, are warmer than the Air they raise in (as appears from the Vapours condensing and becoming visible, almost as soon as they are got out into the Air) fresh Quantities of Vapours therefore, continually warming the Atmosphere over the Sea, will raise its Heat beyond that of Air over the Land. Again, the Sun's Rays reflected from the Earth into the Air, in Summer, are much more than those from the Water into the Air: The Air therefore, over the Earth, warmed by the Reflection of more Rays than that over the Water, is warmer. — Hence Sea-Winds make thick, cloudy, hazy Weather.

Winds blowing from the Continent, are always dry; in Summer warm, and cold in Winter. For there is much less Vapour arising from the Earth, than from the Water; and therefore the Air over the Continent will be impregnated with much fewer Vapours. Add, that the Vapours or Exhalations, raised by a great Degree of Heat out of the Earth, are much finer, and less sensible than those from Water. The *Wind* therefore blowing over the Continent, carries but little Vapour with it, and is therefore dry.

Further, the Earth in Summer is warmer than Water exposed to the same Rays of the Sun. Hence, as the Air partakes of the Heat of contiguous Bodies; that over the Earth in Summer, will be warmer than that over the Water: Therefore the Wind, &c.

After the like Manner it is shewn, that the Land-*Winds* are cold in Winter. Hence we see why Land-*Winds* make clear, cold Weather.

Our northerly and southerly *Winds*, however, which are commonly esteemed the Causes of cold and warm Weather, Mr. *Derham* observes, are really the Effects of the Cold or Warmth of the Atmosphere. Hence it is, that we frequently see a warm southerly Wind, on a sudden change to the North, by the Fall of Snow or Hail; and that in a cold, frosty Morning, we see the *Wind* North, which afterwards wheels about towards the southerly Quarter, when the Sun has well warmed the Air; and again, in the cold Evening, turn northerly or easterly.

The *Winds* are divided into *perennial*, *stated*, and *variable*. — They are also divided into *general* and *particular*.

Perennial, or *constant Winds*, are such as always blow the same Way. Of these we have a very notable one between the two Tropicks, blowing constantly from East to West; called the *General Trade Wind*, in French, *Vents Alizees*.

Stated, or *periodical Winds*, are such as constantly return at certain Times. Such are the Sea and Land Breezes, blowing from Land to Sea in the Evening, and from Sea to Land in the Morning; though this Rule is not general; for in some Places they blow from Sea to Land, in the Evening, and from Land to Sea in the Morning.

Such are also the *shifting*, or *particular Trade Winds*, which for certain Months of the Year, blow one Way, and the rest of the Year, the contrary Way.

Variable, or *erratick Winds*, are such as blow, now this, now that Way; are now hushed, without any Rule, or Regularity, either as to Time or Place.

Such are all the *Winds* observed in the Inland Parts of *England*, &c. though several of these claim their certain Times of the Day. Thus the *West-Wind* is most frequent about Noon; the *South-Wind* in the Night; the *North* in the Morning, &c.

General Wind, is such a one, as, at the same Time, blows the same Way, over a very large Tract of Land, almost all the Year. But even this has its Interruptions: For 1. At Land it is scarce sensible at all, as being broke by the Interposition of Mountains, Valleys, &c. 2. At Sea, near the Shore, it is disturbed by Vapours, Exhalations, and particular *Winds*, blowing from Landward; so that it is chiefly considered as general only at Mid-Sea; Where, 3. It is liable to be disturbed, by Clouds driving from other Quarters.

Particular Winds includes all others, excepting the general *Trade Winds*. Those peculiar to one little Canton, or Part, are called *Topical* or *Provincial Winds*. —

Such is the North *Wind*, on the western Side of the *Alps*, which does not blow above one or two Leagues lengthwise, and much less in Breadth: Such also is the Pontia's in *France*, &c.

WHIRL-WIND, is a *Wind* that rises suddenly, is exceedingly rapid, and impetuous when risen, but soon spent.

There are divers Sorts of *Whirl-winds*, distinguished by their peculiar Names; as the *Prefter*, *Typho*, *Turbo*, *Exhydria*, and *Ecnepbias*.

The *Prefter* is a violent *Wind*, breaking forth with Flashes of Lightning. This is rarely observed; scarce without the *Ecnepbias*. *Seneca* says it is a *Typho* or *Turbo*, kindled or ignited in the Air.

The *Ecnepbias*, is a sudden and impetuous *Wind*, breaking out of some Cloud, frequent in the *Ethiopic* Sea, particularly about the Cape of Good Hope. — The Seamen call them *Travados*.

The *Exhydria*, is a *Wind* bursting out of a Cloud, with a great Quantity of Water. — This only seems to differ in Degree from the *Ecnepbias*, which is frequently attended with Showers.

A *Typho*, or *Vortex*, most properly called a *Whirl-wind*, or *Hurricane*, is an impetuous *Wind*, turning rapidly every Way, and sweeping all round the Place. — It frequently descends from on high. — The *Indians* call it *Orancan*; the *Turks*, &c. *Olipbant*. — It is frequently in the eastern Ocean, chiefly about *Siam*, *China*, &c. and renders the Navigation of those Parts exceeding dangerous.

HURRICANE, a furious Storm of *Wind*, arising from a Contrariety or Opposition of several *Winds*.

Hurricanes are frequent in the *East* and *West Indies*; making terrible Ravages in the Islands thereof, blowing down Houses, rooting up Trees, and even whole Woods, &c.

They begin in the North, some say the West, but turn round; and in a little Time are through all the Points of the Compass.

It is the Custom for the *English* and *French* Inhabitants of the *Caribbee* Islands, to send every Year, about *June*, to the Native *Caribbees* of *St. Dominico*, and *St. Vincent*, to know whether there will be any *Hurricanes* that Year? And about ten or twelve Days ere any *Hurricane* comes, they constantly send them Word.

The Prognosticks those Barbarians go by, are given us by Capt. *Longford*, who in 1697, engaged one of them, by Civilities, to reveal them to him.

It is one of their Principles, that all *Hurricanes* come either on the Day of the Full, Change, or Quarter of the Moon; each of which is discover'd by a Number of Phænomena, the preceding Quarters, as a turbulent Sky, Sun red, universal Calm, the Stars appearing red, Noises in Hollows, or Cavities of the Earth, strong Smell of the Sea, a settled westerly Wind, &c.

That Author assures us, he received that Benefit from the Information, that whereas *Hurricanes* are so dreadful, that all Ships are afraid to put to Sea, while they last, and chuse rather to perish in the Roads; yet with good Management, a Vessel may lay out at Sea, in these, as safely as in other Storms, by taking Care the Ports be well barr'd and calk'd, the Top-masts and Tops taken down, the Yards a-part lash'd, and the Doors and Windows secured. With these Precautions, that experienced Navigator preserv'd his Vessel in two great *Hurricanes*, and taught others how to do the same, by putting out from Port, where they would inevitably have perished. And from the Prognosticks above, he foretold several *Hurricanes*.

He adds, that all *Hurricanes* begin from the North, and turn to the Westward, till arriving at the South-East their Force is spent.

The Cause he suggests to be the Sun leaving the Zenith of those Places, and going back towards the South; and the repelling or bounding back of the Wind, occasion'd by the calming of the general Trade-Wind.

The *aqueous* or *watery METEORS*, are composed of Vapours or watery Particles, variously separated and condensed by Heat and Cold; such are *Clouds*, *Rainbows*, *Hail*, *Snow*, *Rain*, *Dew*, and the like.

CLOUD, is a Collection of condensed Vapours, suspended in the Atmosphere.

A *Cloud* is a Congeries of watery Particles, or Vesicles rais'd from the Water, or watery Parts of the Earth, by the solar or subterraneous Heat, or both; which at their first Rise from our Globe, are too minute to be perceiv'd; but as they mount, meeting with a greater Degree of Cold, are condensed, and render'd opaque by the Re-union of their Parts; so as to reflect Light, and become visible.

The Manner wherein Vapours are rais'd into *Clouds*, may be conceived thus. — Fire being of a light, agile Nature, easily break loose from Bodies wherein it is detain'd. — Now by Reason of the Smallness of the Particles of Fire, their attractive Force must be exceedingly great: Hence in their Ascent through fluid Bodies, part of the Fluid will cling around them, and mount up together with them, in Form of Vesicles of Water replete with Particles of Fire; which Vesicles are what we call Vapour. Further this Vapour being specifically lighter than Air, mounts in it, till having reached such a Region of the Atmosphere as is of the same specifick Gravity with themselves, they will be suspended; till the watery Vesicles, which were at first too thin to be perceived, being now condensed by the Cold of the superior Regions; and their included igneous Particles extinct, or at least driven into a less Compass, and consequently the Parts set closer together; their Density is first augmented, so as to render them opaque enough to reflect the Sun's Light, and become visible; and their specifick Gravity increased, so as to make them descend: In the former State they are called *Clouds*; and in the latter, when they arrive at us, Rain. — Therefore *Clouds* are nothing else but a Vapour suspended in the Atmosphere, the Particles whereof collected together, intercept almost the whole Heat of the Sun, whence those who inhabit the highest Mountains of the *Pyrennees*, or of the *Alps*, when they are arrived at the Region of the *Clouds*, are not insensible of their entering a thick and opaque *Cloud*, which I have experienced, in crossing over the *Appennine*, for I found myself insensibly environ'd with a thick Vapour, buzzing at my Ears.

AURA SEROTINA, is that thin and penetrating Vapour, which exalted together with the Vapours, by the diurnal Heat of the Sun, falls soon after Sun-set. — If the *Aura Serotina*, or *Evening Dew*, be exalted from stinking Places, it is pernicious to the human Body, when it falls. For it causes Rheums, the Tooth-ach, and the like.

The MORNING DEW is a thin, light, insensible Mist, or Rain, falling while the Sun is below the Horizon. — Some define it a Vapour liquified, and let fall in Drops: Others a Vapour having a like Relation to Frost, as Rain has to Snow, &c. Among the Dissertations of M. Huet, is a Letter, to shew that *Dew* does not fall, but rises.

To us, *Dew* appears only to differ from Rain, as more and less. Its Origin and Matter, no doubt is from the Vapours, and Exhalations of the Earth and Water. — The thin Vesiculæ, whereof Vapours consist, being once detached from their Bodies, we all know, keep rising in the Atmosphere, till they arrive at such a Stage of the Air, as is of the same specifick Gravity with themselves: Then their Rise is stopped. Now, as it is the Warmth, or Fire, that dilating the Parts of Water, forms the Vesiculæ specifically lighter than Air, and capable of ascending therein; so when the Heat declines, or is lost, as by the Approach or Contiguity of any colder Body, the Vesiculæ condensed, become heavier, and descend. In the Day-time, therefore, the Sun warming the Atmosphere by a continual Influx of his Rays, the Vapours once raised, continue their Progress, as meeting with nothing to increase their Gravity, till such Time as they are got far out of the Reach of the reflected Warmth of the Earth, in the middle Region of the Atmosphere. Here condensing, they form *Clouds*, from which arise Rain.

But when the Sun is below the Horizon, the Case is somewhat different: For the Atmosphere then cooling, the Vapours rais'd by the Warmth of the Earth, and of the Rays of the Sun lodged therein the preceding Day, begin to condense apace, as soon as they are got out of the Air, spending their Stock of Fire and Heat on the cold moist Air they pass through. Their Ascent, there-

fore, becomes short; and by that Time they are got a few Fathoms high, being exhausted of their Fire, and restored to the natural Dimensions, and Gravity of their constituent Water; they precipitate, and fall back again in little Spherules or Drops.

From these Principles, the other Phænomena of *Dews* are easily accounted for. Hence, *e. gr.* it is, that *Dews* are more copious in the Spring, than in the other Seasons; there being then a greater Stock of Vapour in Readiness, through the small Expence thereof in the Winter's Cold and Frost, than at other Times. Hence, what *Pliny* relates of *Egypt*, that it abounds in *Dews* throughout all the Heats of Summer; for the Air there being too hot to constipate the Vapours in the Day-time, they never gather into *Clouds*, and hence they have no Rain; but we know, that in Climates, where the Days are excessive hot, the Nights are remarkably cold; so that the Vapours raised after Sun-set, are readily condensed into *Dews*; or perhaps, that notable Coldness is rather the Effect, than the Cause of the Quantity of *Dews*. For a deal of Vapour being raised by the great Heat of the Earth; and the Stock of Fire spent on it in the Day-time, the Influx of such a Quantity of cold Moisture, must greatly chill the Air.

MAY-DEW whitens Linen and Wax; the *Dew* of Autumn is converted into a white Frost. Out of *Dew*, putrified by the Sun, arises divers Insects, which change apace from one Species into another. What remains is converted into a fine white Salt, with Angles like these of Salt-petre, after a Number of Evaporations, Calcinations, and Fixations.

There is a Spirit drawn from *May-Dew*, which has wonderful Virtues attributed to it. The Method of gathering and preparing it, is prescribed by *Hanneman*, Physician at *Kiel*. It is to be gather'd in clean Linen Cloths, exposed to the Sun in close Vials; then distill'd, and the Spirit thrown upon the *Caput mortuum*; this is to be repeated till the Earth unite with the Spirit, and become liquid; which happens about the seventh or eighth Cohobation, or Distillation. By such Means you gain a very red, odoriferous Spirit. *Stolterfold*, a Physician of *Lubeck*, thinks *May-Dew* may be gather'd in Glass-Plates, especially in still Weather, and before Sun-rise. And *Et-muller* is of the same Sentiment. It may likewise be collected with a Glass Funnel, exposed to the Air, having a crooked Neck to bring the *Dew* into a Vial in a Chamber.

In the *Philosophical Transactions*, we have an Account of a very extraordinary Kind of *Dew*. For a good Part of the Winter, 1695, says the Bishop of *Cloyne*, there fell in many Parts of the Provinces of *Munster* and *Leinster*, a Kind of thick *Dew*, which the Country-People called *Butter*, from its Consistency and Colour; being soft, clammy, and of a dark Yellow. It falls always in the Night, and chiefly in low, moorish Places, on the Top of the Grass, and often on the Thatch of Cabbins. It was seldom observed in the same Place twice. It commonly lay on the Earth a Fortnight, without changing Colour, but then died, and turn'd black. It fell in Lumps; and had a strong Smell like that of Graves. — M. R. Vans, in the same *Transactions*, gives an Account of the like, at the same Time, in *Limerick* and *Tipperary*; adding, that if one rubbed it with the Hand, it melted; but laying it by the Fire, it dried, and grew hard.

RAIN is a very frequent and useful *Meteor*, form'd of the Concretion of Vapours, and descending from above in Form of Drops of Water.

And Vapours are demonstratively nothing else but little Bubbles or Vesiculæ detached from the Waters, by the Power of the Solar, or subterraneous Heat, or both. These Vesiculæ being specifically lighter than the Atmosphere, are buoyed up thereby, until they arrive at a Region, where the Air is at a just Ballance with them; and here they float, till by some new Agent they are converted into *Clouds*, and thence either into Rain, Snow, Hail, Mist, or the like.

But the Agent of this Formation of the *Clouds* into *Rain*, &c. is a little controverted: The common *Peripateticians* will have it, the Cold, which constantly occupying the superior Region of the Air, chills and condenses the Vesiculæ, at their Arrival from a warmer Quarter, congregates them together, and occasions several of them

to coalesce into little Masses: By this Means their Quantity of Matter increasing in a greater Proportion than their Surface, they become an Over-load to the thin Air, and accordingly descend in Rain.

Mr. *Derham* accounts for the Precipitation, hence; that the Vesiculæ being full of Air, when they meet with a colder Air than that they contain, the Air is contracted into a lesser Space, and consequently the watery Shell or Case render'd thicker, so as to become heavier than the Air, &c.

Others only allow the Cold a Part in the Action, and bring in the Winds as Sharers with it: Indeed it is clear, that a Wind blowing against a Cloud will drive its Vesiculæ upon one another, by which Means several of them coalescing as before will be enabled to descend; and the Effect will be still more considerable, if two opposite Winds blow towards the Place. Add to this, that Clouds already formed, happening to be aggravated by fresh Accessions of Vapour continually ascending, may thence be enabled to descend.

Yet, the grand Cause, according to *Robault*, is still behind; that Author conceives it to be the Heat of the Air, which after continuing for some Time near the Earth, is at length carried up on high by a Wind, and there thawing the snowy Villi, or Flakes of the half-frozen Vesiculæ, reduces them into Drops, which coalescing, descend, and have their Dissolution perfected, in their Progress through the lower and warmer Stages of the Atmosphere.

Others, as Dr. *Clark*, &c. ascribe this Descent of the Clouds, rather to an Alteration of the Atmosphere, than of the Vesiculæ, and suppose it to arise from a Diminution of the Spring or elastick Force of the Air.

This Elasticity, which depends chiefly or wholly on the dry terrene Exhalations being weakened, the Atmosphere sinks under its Burthen, and the Clouds fall on the common Principle of Precipitation.

Now the little Vesiculæ by any, or all, these Means, being once upon the Descent will persist therein, notwithstanding the Increase of Resistance they every Moment meet withal in their Progress through the still denser and denser Parts of the Atmosphere. For as they all tend towards the same Point, viz. the Center of the Earth, the further they fall, the more Coalitions will they make; and the more Coalitions, the more Matter will there be under the same Surface; the Surface only increasing as the Squares, but the Solidity as the Cubes; and the more Matter under the same Surface, the less Friction or Resistance there will be to the same Matter.

Thus if the Cold, the Wind, &c. happen to act early enough to precipitate the ascending Vesiculæ, before they are arrived at any considerable Height; the Coalitions being few in so short a Descent, the Drops will be proportionably small; and thus is formed the Dew.

If the Vapours prove more copious, and rise a little higher, we have a *Mist* or *Fog*.

A little higher still, and they produce a small Rain, &c.

If they neither meet with Cold, nor Wind enough to condense or dissipate them; they form a heavy, thick dark Sky, which lasts sometimes several Weeks.

Hence we may account for many of the Phenomena of the Weather, e. gr. why a cold is always a wet Summer; and a warm, a dry one? Because the Principle of Precipitation is had in the one Case, and wanted in the other.

Why we have ordinarily, most Rain about the Equinoxes? Because the Vapours arise more plentifully than ordinarily in the Spring, as the Earth becomes loosened from the brumal Conspurations; and because as the Sun recedes from us in Autumn, the Cold increasing, the Vapours that had lingered above during the Summer Heats, are now dispatched down, &c.

Why a settled, thick, close Sky scarce ever rains till it have been first clear? Because the equally defected Vapours must first be condensed, and congregated into separate Clouds, to lay the Foundations of Rain, by which Means the rest of the Face of Heaven is left open, and pervious to the Rays of the Sun, &c.

As to the Quantity of Rain that falls, its Proportion in several Places at the same Time, and in the same Place at several Times, we have Store of Observations,

Journals, &c. in the Memoirs of the French Academy, the *philosophical Transactions*, &c. an Idea whereof will not be unacceptable.

Upon measuring then, the Rain falling yearly, its Depth at a Medium, is found as in the following Tables.

Depth of the Rain in falling yearly, and its Proportion in several Places.

At Paris, in France, observ'd by M. de la Hire	19 Inch.
At Lisle, in Flanders, by M. Vauban	24
At Pisa, in Italy, by Dr. Mich. Ang. Tilli	43 $\frac{1}{2}$
At Townly, in Lancashire, by Mr. Townly	42 $\frac{1}{2}$
At Upminster, in Essex, by Mr. Derham	19 $\frac{1}{2}$
At Zurich, in Switzerland, by D. Scheuchzer	32 $\frac{1}{2}$

Proportion of the Rain of several Years to one another.

At PARIS.			At UPMINSTER.	
21 Inch.	38 cent.	1700	19 Inch.	03 cent.
27	78	1701	18	69
17	42	1702	20	38
18	51	1703	23	99
21	20	1704	15	81
14	82	1705	16	93

Proportions of the Rain of the several Seasons to one another.

1708	Depth at Pisa.	Depth at Upminster.	Depth at Zurich.	1708	Depth at Pisa.	Depth at Upminster.	Depth at Zurich.
	Inch.	Inch.	Inch.		Inch.	Inch.	Inch.
Jan.	6 41	2 88	1 64	July	0 00	1 11	3 50
Febr.	3 28	0 46	1 65	Aug.	2 27	2 94	3 15
March	2 65	2 03	1 51	Sept.	7 21	1 45	3 02
April	1 25	0 96	4 69	Octob.	5 33	0 23	2 24
May	3 33	0 02	1 91	Nov.	0 13	0 86	0 62
June	4 90	2 32	5 91	Dec.	0 00	1 97	2 62
half-year	28 82	10 67	17 31	half-year	14 94	8 57	15 35

Preternatural RAINS, or Showers, as of Blood, &c. are very common in our Annals, and even natural Histories, yet if strictly pry'd into, will be all found other Things than Rain.

Bloody Rains, Dr. *Merret* observes, are certainly nothing else but the Excrements of Insects. Accordingly *Gassendi* gives an Instance of a bloody Rain in France, which terrified the People; but which *Peirese* found to be only red Drops coming from a Sort of Butterfly that flew about in great Numbers, as he concluded from seeing such red Drops come from them; from the Drops not being laid on Buildings, or the outer Surfaces of Stones, &c. but in Cavities and Holes, and from those Walls only being tinged therewith that were next the Fields, not those in the Streets, and the former only a little Height, such as Butterflies are used to fly to.

This Reasoning of *Peirese* is, in my Opinion, very lame, and what we call in France *tiré par les cheveux*; for the Air should have been pestered with a prodigious Quantity of those Butterflies, and them afflicted with a Kind of bloody Flux to produce such a Phenomenon; which I am more inclinable to think proceeds from the Vapours exalted from the Earth, and the different Disposition of their Particles when resolved into Rain, which reflecting Light in a Manner quite different from common Rain, strikes our Sight with a red Colour; or the Vapours themselves may have preserved that Colour in their Exaltation from the Earth.

The same Dr. *Merret* adds, that it is most evident the Rain of *Wheat* are nothing but Ivy-Berries swallowed by the Starlings, and again cast forth by Stool. An Instance of such Rain we have in the *Philosophical Transactions*, from the Country about *Bristol*, by Mr. *H. Cole*, who, upon examining the Drops, found them to be the Seeds of Ivy-Berries, blown down by fierce Winds from Towers, Churches, Chimneys, Walls, &c. where they had been left by Birds, chiefly Starlings and Choughs.

We have in France a Tradition of a Rain of Stones, in a Plain six or seven Leagues long between Arles and Marseilles, called *la crau*, which is now quite covered therewith. The Fable has it, that *Hercules* in his Engagement with *Albion* and *Bregon*, in favour of *Neptune*, wanting Darts, was assisted by *Jupiter* with a Shower of these Stones, seen to this Day.

If the Vapours condensed into Clouds, be not liquefied in falling, which happen when both the superior and inferior Region of the Air are very cold; then they produce not Drops of Rain but Flakes of Snow. For,

Snow, *nix*, seems to be nothing else but a Meteor formed in the middle Region of the Air, of Vapours raised by the Action of the Sun or subterraneous Fire, there congealed, its Parts constipated, its specific Gravity increased, and thus returned to the Earth in Form of little white Villi or Flakes.

The Snow we receive may properly enough be ascribed, as already observed, to the Coldness of the Atmosphere, through which it falls. When the Atmosphere is warm enough to dissolve the Snow before it arrives at us, we call it Rain; if it preserves itself undissolved, it makes what we call Snow.

Dr. Grew, in a Discourse on the Nature of Snow, observes, that many Parts thereof are of a regular Figure, for the most Parts are so many little Rowels or Stars of six Points, and are perfect and transparent Ice, as any we see on a Pond, &c. Upon each of these Points are other collateral Points set at the same Angles as the main Points themselves: Among which there are divers other irregular Troops, which are chiefly broken Points, and Fragments of the regular ones. Others also, by various Winds, seem to have been thawed, and froze again into irregular Clutters, so that it seems as if the whole Body of Snow were an infinite Mass of Icicles irregularly figured; that is, a Cloud of Vapours being gathered into Drops, the said Drops forthwith descend; upon which Descent meeting with a freezing Air, as they pass through a colder Region, each Drop is immediately froze into an Icicle, shooting itself forth into several Points; but these still continuing their Descent, and meeting with some intermitting Gales of warmer Air, or in their continual Waftage to and fro, touching upon each other, some of them are a little thawed, blunted, and again froze into Clusters, or intangled so as to fall down, in what we call Flakes.

The Lightness of Snow, although it is firm Ice, is owing to the Excess of its Surface, in comparison to the Matter contained under it; as Gold itself may be extended in Surface, till it will ride upon the least Breath of Air.

Snow, abounding with Nitre and volatile Salt, excites the Fecundity of the Earth. It preserves from the Plague, cures Fevers, Cholicks, Tooth-achs, sore Eyes, and Pleurifies, says *Bartholin* (for which last Use his Countrymen of Denmark us'd to keep Snow-Water gathered in March). He adds, that it contributes to the Prolongation of Life, giving Instances of People in the Mountains of the Alps that live to great Ages; and to the preserving of dead Bodies; Instances whereof he gives of Persons buried under Snow in passing the Alps, which are found uncorrupted in the Summer when the Snow is melted.

He observes, that in Norway Snow-Water is not only their sole Drink in the Winter, but Snow even serves for Food; People having been known to live several Days without any other Sustainance.

Some imagine that the Generality of these medicinal Effects of Snow are not to be ascribed to any specific Virtue in Snow, but to other Causes; that it fructifies the Ground, for Instance, by guarding the Corn or other Vegetables from the intenser Cold of the Air, especially the cold piercing Winds: And preserves dead Bodies, by constipating and binding up the Parts, and thus preventing all such Fermentations or internal Conflicts of their Particles, as would produce Putrifaction. It is a popular Error, that the first Snow that falls in the Year, has particular Virtues. In Italy they cool their Wine all the Summer with Snow-Water.

Signior Sarotti, in the *Philosophical Transactions*, mentions a red or bloody Snow, which fell on the Mountains

la Langhe, near Genoa, on St. Joseph's Day. This Snow when squeezed, yielded a Liquor of the same red Colour.

But when the little Clusters or Flakes of the congealed Vapour, are liquified by a warm Air, and meet afterwards in their Descent with a colder Air, they are then changed into Hail, whose Grains acquire a different Figure, according to the different Solutions of the Flakes. Sometimes it is round, sometimes angular, triangular, pyramidal, &c. sometimes thin and flat, Star-like, with six equal Points, &c.

HAIL, is observed frequently to attend Thunder and Lightning; the Nitre that contributes to the one, having likewise a large Share in the Production of the other.

Natural Histories furnish us with various Instances of extraordinary Showers of Hail. In the *Philosophical Transactions* Dr. Halley and others relate, that in *Cheshire*, *Lancashire*, &c. April 29, 1697. a thick black Cloud, coming from *Carnarvanshire*, disposed the Vapours to congeal in such a Manner, that about the Breadth of two Miles, which was the Limit of the Cloud, in its Progress for the Space of sixty Miles, it did inconceivable Damage; not only killing all Sorts of Fowls, and other small Animals, but splitting Trees, knocking down Horses and Men, even ploughing up the Earth, so that the Hail-Stones buried themselves under Ground, an Inch or an Inch and a Half deep. The Hail-Stones, many of which weighed five Ounces, and some half a Pound, and being five or six Inches about, were of various Figures, some round, others half-round; some smooth, others embossed and crenelated: The Icy Substance of them was very transparent and hard; but there was a snowy Kernel in the Middle of them.

In *Hertfordshire*, May 4. the same Year, after a severe Storm of Thunder and Lightning, a Shower of Hail succeeded, which far exceeded the former: Some Persons were killed by it, their Bodies beat all black and blue; vast Oaks were split, and Fields of Rye cut down as with a Scythe: The Stones were measured from ten to thirteen or fourteen Inches about. Their Figures were various, some oval, others picked, some flat.

At *Lisle* in *Flanders*, in 1686. fell Hail-Stones of very large Size, some of which contained in the Middle a dark-brown Matter, which thrown on the Fire gave a very great Report.

Mezeray, speaking of the War of Louis XII. King of France, in Italy, in the Year 1510. relates, that there was for some Time an horrible Darkness, thicker than that of Night; after which the Clouds broke into Thunder and Lightning, and there fell a Shower of Hail-Stones, or rather (as he calls them) pebble Stones, which destroy'd all the Fish, Birds, and Beasts of the Country. It was attended with a strong Smell of Sulphur; and the Stones were of a bluish Colour, some of them weighing an hundred Pounds.

From these I'll pass to the Rainbow, and other *amphatical* Impressions, as the *Halo*, *Parhelion*, and *Parasenele*.

The RAINBOW, *iris*, is a Meteor in form of a party-coloured Arch or Semicircle, exhibited in a rainy Sky, opposite to the Sun, by the Refraction of its Rays in the Drops of falling Rain.

There is also a secondary or fainter Rainbow, usually seen investing the former at some Distance; and among Naturalists we read of Lunar Rainbows, marine Rainbows, &c.

The Rainbow, Sir Isaac Newton observes, never appears but where it rains in the Sunshine, and may be represented artificially, by contriving Waters to fall in little Drops like Rain, through which the Sun shining, exhibits a Bow to the Spectator, placed between the Sun and the Drops; especially if a dark Body, e. gr. a black Cloth be disposed beyond the Drops.

Anton. de Dominis, first accounted for the Rainbow in 1611; he explained at large how it was formed, by Refraction and Reflection of the Sun-beams, in spherical Drops of Water; and confirmed his Explications by Experiments made with Glass Globes, &c. full of Water; wherein he was followed by *Des Cartes*, who mended and improved on his Account: But as they were both in the Dark as to the true Origin of Colours, their Explications are defective, and in some Things erroneous; which

which the *Newtonians* pretend to supply and correct by their Doctrine of Colours; giving the following Theory of the *Rainbow*.

To conceive the Origin of the *Rainbow*, we must consider what will befall Rays of Light, coming from a very remote Body, *e. gr.* the Sun; and falling on a Globe of Water, such as we know a Drop of Rain to be.

Suppose then *A D K N*, *Tab. opt. fig. 12.* to be a Drop of Rain, and the Lines *E F*, *B A*, *O N*, to be Rays of Light coming from the Centre of the Sun; which by Reason of the immense Distance of the Sun, we conceive to be parallel. Now the Ray *B A* being the only one that falls perpendicularly on the Surface of the Water, and all the rest obliquely; it is easily inferred, that all the other Rays will be refracted towards the Perpendicular.

Thus the Ray *E F*, and others accompanying it, will not go on strait to *G*; but as they arrive at *H I*, deflect from *F* to *K*, where some of them, probably, escaping into the Air, the rest are reflected upon the Line *K N*, so as to make the Angles of Incidence and Reflection equal.

Farther, as the Ray *K N*, and those accompanying it, fall obliquely upon the Surface of the Globule; they cannot pass out into the Air, without being refracted, so as to recede from the Perpendicular *L M*; and therefore will not proceed strait to *Y*, but deflect to *P*.

It may be here observed, that some of the Rays arriving at *N*, do not pass out into the Air, but are again reflected to *Q*; where being refracted like the rest, they do not proceed right to *Z*, but declining from the Perpendicular *T V*, are carried to *R*; but since we here only regard the Rays, as they may affect the Eye, placed a little below the Drop, *e. gr.* at *P*, those which deflect from *N* to *Q*, we set aside as useless, because they never come at the Eye. On the contrary, it is to be observed, that there are other Rays, as 2, 3, and the like; which being reflected from 3 to 4, thence to 5, and from 5 to 6, may at length arrive at the Eye placed beneath the Drop.

Thus much is obvious; but to determine precisely the Quantities of Refraction of each Ray, there must be a Calculation; by such Calculation it appears, that the Rays which fall on the Quadrant *A D*, are continued in Lines, like those here drawn in the Drop *A D K N*; wherein there are three Things very considerable: *First*, That the two Refractions of the Rays in their Ingress and Egress, are both the same Way, so that the latter does not destroy the Effect of the former. *Secondly*, That of all the Rays passing out of *A N*, *N P*, and those adjoining to it, are the only ones capable of affecting the Sense; as being sufficiently close or contiguous; and because coming out parallel; whereas the rest are divaricated, and dispersed too far to have any sensible Effect, at least to produce any Thing so vivid as the Colours of the *Bow*. *Thirdly*, That the Ray *N P* has Shade or Darkness under it; for since there is no Ray comes out of the Surface *N 4*, it is the same Thing as if the Parts were cover'd with an opaque Body. We might add, that the same Ray *N P*, has Darkness above it; since the Rays that are above it are ineffectual; and signify no more than if there were none at all.

Add to these, that all the effectual Rays have the same Point of Reflection, *i. e.* the parallel and contiguous Rays, which alone are effectual after Refraction, will all meet in the same Point of the Circumference; and be reflected thence to the Eye.

Farther it appears by Calculation, that the Angle *O N P*, included between the Ray *N P*, and the Line *O N*, drawn from the Center of the Sun, which is the Angle whereby the *Rainbow* is distant from the opposite Point of the Sun, and which makes the *Semidiameter of the Bow*, contains 41° , $30'$.

But since, besides those Rays coming from the Center of the Sun to the Drop of Water, there are many more from the several Points of its Surface: There are a great many other effectual Rays to be consider'd; especially that from the uppermost, and that from the lowest Part of the Sun's Body.

Since then the apparent Diameter of the Sun, is a-

bout 16 Seconds, it follows that an effectual Ray from the upper Part of the Sun, will fall higher than the Ray *E F*, by 16 Seconds: This does the Ray *G H*, *fig. 13.* which being refracted as much as *E F*, deflects to *I*, then to *L*, and at length emerging equally refracted with the Ray *N P*, proceeds to *M*; and makes an Angle *O N M*, of 41° , $14'$, with the Line *O N*.

In like Manner the effectual Ray *Q R*, coming from the lowest Part of the Sun, falls on the Point *R*, 16 Min. lower than the Point *F*, on which the Ray *E F* falls; and being refracted declines to *S*; whence it is reflected to *T*; where emerging into the Air, it proceeds to *V*; so as the Line *T V*, and the Ray *O T*, contain an Angle of 41° , and $46'$.

Again, upon computing the Deflections of the Rays, which like that 23, *fig. 14.* coming from the Center of the Sun, and being received into the lower Part of the Drop, we have supposed to be twice reflected, and twice refracted, and to enter the Eye like that 67, *fig. 16.* we find that which may be accounted effectual, as 67, with the Line 86, drawn from the Center of the Sun, contains an Angle 867, of about 62 Degrees: Whence it follows, that the effectual Ray from the highest Part of the Sun, with the same Line 86, includes an Angle less by 16 Min. and that from the lowest Part of the Sun, an Angle greater by 16 Min.

Thus since *A B C D E F*, is the Path of the efficacious Ray, from the highest Part of the Sun to the Eye in *F*; the Angle 86 *F* becomes of about 51° , $44'$. In like Manner, since *G H I K L M* is the Way of an effectual Ray from the lowest Part of the Sun to the Eye, the Angle 86 *M*, becomes nearly of 52° , $16'$.

Since then we admit several Rays to be effectual, besides those from the Center of the Sun; what we have said of the Shade, will need some Alteration: For of the three Rays described, *fig. 12*, and *13.* only the two extreme ones will have a Shadow joined to them, and that only on the outer Side. Hence it is evident, that these Rays are perfectly disposed to exhibit all the Colours of the Prism.

For the great Quantity of dense or intense Light, *i. e.* the Bundle of Rays collected together in a certain Point, *v. gr.* in the Point of Reflection of the effectual Rays, may be accounted as a livid or radiant Body, terminated all around by Shade. But the several Rays thus emitted to the Eye are both of different Colours, and are differently refracted out of the Water into Air, notwithstanding their falling alike upon the refracting Surface.

Hence it follows, that the different or heterogeneous Rays will be separated from one another, and will tend several Ways; and the homogeneous Rays will be collected, and tend the same Way; and therefore this livid Point of the Drop wherein the Refraction is effected, will appear fringed or border'd with several Colours; that is, red, green, and blue Colours will arise from the Extrems of the red, green, and blue Rays of the Sun transmitted to the Eye from several Drops, one higher than another; after the same Manner as is done in viewing livid, or other Bodies through a Prism.

Thus, adds Sir *Isaac Newton*, the Rays that differ in Refrangibility, will emerge at different Angles; and consequently, according to their different Degrees of Refrangibility, emerging most copiously at different Angles, will exhibit different Colours in different Places.

Note, That *Refrangibility* of Light, is the Disposition of the Rays to be refracted. That a *greater* or *less Refrangibility*, is a Disposition to be more or less refracted, in passing at equal Angles of Incidence, into the same Medium.

A great Number then of these little Globules being diffused in the Air, will fill the whole Place with these different Colours; provided they be so disposed, as that effectual Rays may come from them to the Eye; and thus will the *Rainbow* at length arise.

Now to determine what that Disposition must be; suppose a right Line drawn from the Centre of the Sun, through the Eye of the Spectator, as the Line *V X*, *fig. 13.* called the Line of Aspect; being drawn from so remote a Point, it may be esteemed parallel to all other Lines

Lines drawn from the same Point: But a right Line falling on two Parallels, makes the alternate Angles. If then an indefinite Number of Lines be imagined drawn from the Spectator's Eye to a Part opposite to the Sun where it rains; which Lines make different Angles with the Line of Aspect, equal to the Angle of the Refraction of the differently refrangible Rays, *e. gr.* Angles of 41° , $46'$, and of 41° , $30'$, and of 41° , $40'$. These Lines falling on Drops of Rain illuminated by the Sun, will make Angles of the same Magnitude, with Rays drawn from the Center of the Sun to the same Drops. And therefore the Lines thus drawn from the Eye, will represent the effectual Rays that occasion the Sensation of any Colour.

That, *e. gr.* making an Angle of 41° , $46'$, representing the least refrangible or red Rays of the several Drops, and of 41° , $40'$, the most refrangible or violet Rays: The intermediate Colours and Refrangibilities will be found in the intermediate Space.

Now it is known that the Eye being placed in the Vortex of a Cone, sees Objects upon its Surface as if they were in a Circle; and the Eye of our Spectator is here in the common Vortex of several Cones, formed by the several Kinds of efficacious Rays, with the Lines of Aspect. And in the Surface of that whole Angle where the Vortex or Eye is the greatest, and wherein the others are included, are those Drops or Parts of Drops which appear red: And in the Surface of that Cone whose Angle is least, are the purple Drops: And in the intermediate Cones are the green, blue, &c. Drops. Hence then several Kinds of Drops must appear as if disposed into so many circular colour'd Fasciæ or Arches, as we see in the *Rainbow*.

This Part of the Solution, Sir *Isaac Newton* expresses more artfully, thus: Suppose O, fig. 15. *Optic.* the Eye, and OP a Line parallel to the Sun's Rays, and let POE, POF be Angles of 40° , $17'$, and 42° , $2'$. And suppose the Angle to turn about their common Side OP, with their other Sides OE and OF, they will describe the Bounds or Verges of the *Rainbow*.

For if EF, be Drops placed any where in the conical Surface described by OE, OF; and be illuminated by the Sun's Rays SE, SF, the Angle SEO being equal to the Angle POE or 40° Deg. $17'$ Min. shall be the greatest Angle in which the most refrangible Rays come after Reflection be refracted to the Eye; and therefore all the Drops in the Line OE, shall send the most refrangible Rays most copiously to the Eye, and thereby strike the Senses with the deepest Violet-colour in that Region.

And in like Manner the Angle SFO being = to the Angle POF = 42° Deg. $2'$ Min. shall be the greatest, in which the least refrangible Rays, after one Reflection, can emerge out of the Drops; and these Rays shall come most copiously to the Eye from the Drops in the Line OF, and strike the Senses with the deepest red Colour in that Region.

And by the same Argument the Rays, which have intermediate Degrees of Refrangibility, shall come most copiously from Drops between E and F, and so strike the Senses with the intermediate Colours, in the Order which their Degrees of Refrangibility require; that if the Progress from E to F, or from the Inside of the Bow to the Outside, in this Order, *Violet, Indico, Blue, Green, Yellow, Orange, Red*; though the Violet, by the Mixture of the white Light of the Clouds will appear faint, and incline to a Purple.

And since the Lines OE, OF may be situated any where in the abovementioned conical Surface; what is said of the Drops and Colours in these Lines is to be understood of the Drops and Colours throughout the whole Superficies. Thus is the primary or *inner Bow* formed.

As to the *secondary* or *fainter Bow*, usually surrounding the former; in assigning what Drops would appear coloured, we exclude such as Lines drawn from the Eye, making Angles a little greater than 40° Deg. $2'$ Min. should fall upon; but not such as should contain Angles much greater.

For, if an indefinite Number of such Lines be drawn from the Spectator's Eye, some whereof make Angles of 50° Deg. $57'$ Min. with the Line of Aspect; *e. gr.*

OG, otherwise Angles of 54° Deg. $7'$ Min. *e. gr.* OH; those Drops whereon these Lines fall, must of Necessity exhibit Colours, particularly those of 50° Deg. $57'$ Min.

E. gr. the Drop G will appear red, the Line GO being the same with an effectual Ray; which after two Reflections and two Refractions, exhibits a red Colour. Again, those Drops which receive Lines of 54° Deg. $7'$ Min. *e. g.* the Drop H will appear Purple, the Line OH, being the same with an effectual Ray, which after two Reflections and two Refractions, exhibits Purple.

Now there being a sufficient Number of these Drops, it is evident there must be a second *Rainbow*, formed after the like Manner as the first.

Thus Sir *Isaac Newton*; in the least refrangible Rays, the least Angle at which a Drop can send effectual Rays after two Reflections, is found by Computation to be 50° Deg. $57'$ Min. and in the most refrangible the least Angle is found 54° Deg. $7'$ Min.

Suppose then O the Place of the Eye, as before, and POG, POH to be Angles of 50° Deg. $57'$ Min. and 54° Deg. $7'$ Min; and these Angles to be turned about their common Side OP, with their other Sides OG, OH, they will describe the Verges or Borders of the *Rainbow* CHDG.

For if GH be Drops placed any where in the conical Superficies described by OG, OH, and be illuminated by the Sun's Rays; the Angle SGO, being equal to the Angle POG or 50° Deg. $57'$ Min. shall be the least Angle, in which the then less refrangible Rays shall come most copiously to the Eye from the Drops in the Line OG, and strike the Senses with the deepest Red in that Region.

And the Angle SHO, being equal to POH, 54° shall be the least Angle, in which the most refrangible Rays after two Reflections, can emerge out of the Drops; and therefore those Rays should come most copiously to the Eye from the Drops in the Line OH, and so strike the Senses with the deepest Violet in that Region.

And by the same Argument, the Drops in the Region between G and H shall strike the Senses with the intermediate Colours, in the Order which their Degrees of Refrangibility require, that is, in the Progress from G to H, or from the Inside of the Bow to the Outer, in this Order; *Red, Orange, Yellow, Green, Blue, Indico, Violet.*

And since the Lines OG, OH, may be situated any where in the conical Surface; what is said of the Drops and Colours in those Lines, is to be understood of the Drops and Colours every where in these Superficies.

Thus are formed two *Bows*, an interior and stronger, by one Reflection; and an exterior and fainter by two; the Light becoming weaker and weaker by every Reflection.

Their Colours will lie in a contrary Order to one another, the first having the Red without, and the Purple within; and the second, the Purple without and Red within, and so of the rest.

This Doctrine of the *Rainbow* is confirmed by an easy Experiment; for upon hanging up a Glass Globe full of Water in the Sunshine, and viewing it in such a Posture as that the Rays which come from the Globe to the Eye may, with the Sun's Rays, include an Angle either of 42° , or 50° ; if, *e. gr.* the Angle be about 42° , the Spectator supposed at O, will see a full red Colour in that Side of the Globe opposite to the Sun, as at F. And if that Angle be made a little less, suppose by depressing the Globule to E, the other Colours, Yellow, Blue, and Green, will appear successively in the same Side of the Globe, also exceedingly bright.

But if the Angle be made about 50° , suppose by raising the Globule G there will appear a red Colour in that Side of the Globe towards the Sun, though that somewhat faint; and if the Angle be made greater, suppose by raising the Globe to H, the Red will change successively to the other Colours, Yellow, Green, and Blue.

The same Thing is observed in letting the Globe rest, and raising or depressing the Eye to make the Angle of a just Magnitude. This is called an *artificial Rainbow*.

Des Cartes was the first who took the *Dimensions* of
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which the *Newtonians* pretend to supply and correct by their Doctrine of Colours; giving the following Theory of the *Rainbow*.

To conceive the Origin of the *Rainbow*, we must consider what will befall Rays of Light, coming from a very remote Body, *e. gr.* the Sun; and falling on a Globe of Water, such as we know a Drop of Rain to be.

Suppose then A D K N, *Tab. opt. fig. 12.* to be a Drop of Rain, and the Lines E F, B A, O N, to be Rays of Light coming from the Centre of the Sun; which by Reason of the immense Distance of the Sun, we conceive to be parallel. Now the Ray B A being the only one that falls perpendicularly on the Surface of the Water, and all the rest obliquely; it is easily inferred, that all the other Rays will be refracted towards the Perpendicular.

Thus the Ray E F, and others accompanying it, will not go on straight to G; but as they arrive at H I, deflect from F to K, where some of them, probably, escaping into the Air, the rest are reflected upon the Line K N, so as to make the Angles of Incidence and Reflection equal.

Farther, as the Ray K N, and those accompanying it, fall obliquely upon the Surface of the Globule; they cannot pass out into the Air, without being refracted, so as to recede from the Perpendicular L M; and therefore will not proceed straight to Y, but deflect to P.

It may be here observed, that some of the Rays arriving at N, do not pass out into the Air, but are again reflected to Q; where being refracted like the rest, they do not proceed right to Z, but declining from the Perpendicular T V, are carried to R; but since we here only regard the Rays, as they may affect the Eye, placed a little below the Drop, *e. gr.* at P, those which deflect from N to Q, we set aside as useless, because they never come at the Eye. On the contrary, it is to be observed, that there are other Rays, as 2, 3, and the like; which being reflected from 3 to 4, thence to 5, and from 5 to 6, may at length arrive at the Eye placed beneath the Drop.

Thus much is obvious; but to determine precisely the Quantities of Refraction of each Ray, there must be a Calculation; by such Calculation it appears, that the Rays which fall on the Quadrant A D, are continued in Lines, like those here drawn in the Drop A D K N; wherein there are three Things very considerable: *First*, That the two Refractions of the Rays in their Ingrefs and Egrefs, are both the same Way, so that the latter does not destroy the Effect of the former. *Secondly*, That of all the Rays passing out of A N, N P, and those adjoining to it, are the only ones capable of affecting the Sense; as being sufficiently close or contiguous; and because coming out parallel; whereas the rest are divaricated, and dispersed too far to have any sensible Effect, at least to produce any Thing so vivid as the Colours of the *Bow*. *Thirdly*, That the Ray N P has Shade or Darknes under it; for since there is no Ray comes out of the Surface N 4, it is the same Thing as if the Parts were cover'd with an opaque Body. We might add, that the same Ray N P, has Darknes above it; since the Rays that are above it are ineffectual; and signify no more than if there were none at all.

Add to these, that all the effectual Rays have the same Point of Reflection, *i. e.* the parallel and contiguous Rays, which alone are effectual after Refraction, will all meet in the same Point of the Circumference; and be reflected thence to the Eye.

Farther it appears by Calculation, that the Angle O N P, included between the Ray N P, and the Line O N, drawn from the Center of the Sun, which is the Angle whereby the *Rainbow* is distant from the opposite Point of the Sun, and which makes the *Semidiameter of the Bow*, contains $41^{\circ} 30'$.

But since, besides those Rays coming from the Center of the Sun to the Drop of Water, there are many more from the several Points of its Surface: There are a great many other effectual Rays to be consider'd; especially that from the uppermost, and that from the lowest Part of the Sun's Body.

Since then the apparent Diameter of the Sun, is a-

bout 16 Seconds, it follows that an effectual Ray from the upper Part of the Sun, will fall higher than the Ray E F, by 16 Seconds: This does the Ray G H, *fig. 13.* which being refracted as much as E F, deflects to I, then to L, and at length emerging equally refracted with the Ray N P, proceeds to M; and makes an Angle O N M, of $41^{\circ} 14'$, with the Line O N.

In like Manner the effectual Ray Q R, coming from the lowest Part of the Sun, falls on the Point R, 16 Min. lower than the Point F, on which the Ray E F falls; and being refracted declines to S; whence it is reflected to T; where emerging into the Air, it proceeds to V; so as the Line T V, and the Ray O T, contain an Angle of 41° , and $46'$.

Again, upon computing the Deflections of the Rays, which like that 23, *fig. 14.* coming from the Center of the Sun, and being received into the lower Part of the Drop, we have supposed to be twice reflected, and twice refracted, and to enter the Eye like that 67, *fig. 16.* we find that which may be accounted effectual, as 67, with the Line 86, drawn from the Center of the Sun, contains an Angle 867, of about 62 Degrees: Whence it follows, that the effectual Ray from the highest Part of the Sun, with the same Line 86, includes an Angle less by 16 Min. and that from the lowest Part of the Sun, an Angle greater by 16 Min.

Thus since A B C D E F, is the Path of the efficacious Ray, from the highest Part of the Sun to the Eye in F; the Angle 86 F becomes of about $51^{\circ} 44'$. In like Manner, since G H I K L M is the Way of an effectual Ray from the lowest Part of the Sun to the Eye, the Angle 86 M, becomes nearly of $52^{\circ} 16'$.

Since then we admit several Rays to be effectual, besides those from the Center of the Sun; what we have said of the Shade, will need some Alteration: For of the three Rays described, *fig. 12.* and *13.* only the two extreme ones will have a Shadow joined to them, and that only on the outer Side. Hence it is evident, that these Rays are perfectly disposed to exhibit all the Colours of the Prism.

For the great Quantity of dense or intense Light, *i. e.* the Bundle of Rays collected together in a certain Point, *v. gr.* in the Point of Reflection of the effectual Rays, may be accounted as a livid or radiant Body, terminated all around by Shade. But the several Rays thus emitted to the Eye are both of different Colours, and are differently refracted out of the Water into Air, notwithstanding their falling alike upon the refracting Surface.

Hence it follows, that the different or heterogeneous Rays will be separated from one another, and will tend several Ways; and the homogeneous Rays will be collected, and tend the same Way; and therefore this livid Point of the Drop wherein the Refraction is effected, will appear fringed or border'd with several Colours; that is, red, green, and blue Colours will arise from the Extrems of the red, green, and blue Rays of the Sun transmitted to the Eye from several Drops, one higher than another; after the same Manner as is done in viewing livid, or other Bodies through a Prism.

Thus, adds Sir *Isaac Newton*, the Rays that differ in Refrangibility, will emerge at different Angles; and consequently, according to their different Degrees of Refrangibility, emerging most copiously at different Angles, will exhibit different Colours in different Places.

Note, That *Refrangibility* of Light, is the Disposition of the Rays to be refracted. That a *greater* or *less Refrangibility*, is a Disposition to be more or less refracted, in passing at equal Angles of Incidence, into the same Medium.

A great Number then of these little Globules being diffused in the Air, will fill the whole Place with these different Colours; provided they be so disposed, as that effectual Rays may come from them to the Eye; and thus will the *Rainbow* at length arise.

Now to determine what that Disposition must be; suppose a right Line drawn from the Centre of the Sun, through the Eye of the Spectator, as the Line V X, *fig. 13.* called the Line of Aspect; being drawn from so remote a Point, it may be esteemed parallel to all other Lines

Lines drawn from the same Point: But a right Line falling on two Parallels, makes the alternate Angles. If then an indefinite Number of Lines be imagined drawn from the Spectator's Eye to a Part opposite to the Sun where it rains; which Lines make different Angles with the Line of Aspect, equal to the Angle of the Refraction of the differently refrangible Rays, *e. gr.* Angles of 41° , $46'$, and of 41° , $30'$, and of 41° , $40'$. These Lines falling on Drops of Rain illuminated by the Sun, will make Angles of the same Magnitude, with Rays drawn from the Center of the Sun to the same Drops. And therefore the Lines thus drawn from the Eye, will represent the effectual Rays that occasion the Sensation of any Colour.

That, *e. gr.* making an Angle of 41° , $46'$, representing the least refrangible or red Rays of the several Drops, and of 41° , $40'$, the most refrangible or violet Rays: The intermediate Colours and Refrangibilities will be found in the intermediate Space.

Now it is known that the Eye being placed in the Vortex of a Cone, sees Objects upon its Surface as if they were in a Circle; and the Eye of our Spectator is here in the common Vortex of several Cones, formed by the several Kinds of efficacious Rays, with the Lines of Aspect. And in the Surface of that whole Angle where the Vortex or Eye is the greatest, and wherein the others are included, are those Drops or Parts of Drops which appear red: And in the Surface of that Cone whose Angle is least, are the purple Drops: And in the intermediate Cones are the green, blue, &c. Drops. Hence then several Kinds of Drops must appear as if disposed into so many circular colour'd Fasciæ or Arches, as we see in the *Rainbow*.

This Part of the Solution, Sir *Isaac Newton* expresses more artfully, thus: Suppose O, fig. 15. *Optic.* the Eye, and OP a Line parallel to the Sun's Rays, and let POE, POF be Angles of 40° , $17'$, and 42° , $2'$. And suppose the Angle to turn about their common Side OP, with their other Sides OE and OF, they will describe the Bounds or Verges of the *Rainbow*.

For if EF, be Drops placed any where in the conical Surface described by OE, OF; and be illuminated by the Sun's Rays SE, SF, the Angle SEO being equal to the Angle POE or 40° Deg. $17'$ Min. shall be the greatest Angle in which the most refrangible Rays come after Reflection be refracted to the Eye; and therefore all the Drops in the Line OE, shall send the most refrangible Rays most copiously to the Eye, and thereby strike the Senses with the deepest Violet-colour in that Region.

And in like Manner the Angle SFO being = to the Angle POF = 42° Deg. $2'$ Min. shall be the greatest, in which the least refrangible Rays, after one Reflection, can emerge out of the Drops; and these Rays shall come most copiously to the Eye from the Drops in the Line OF, and strike the Senses with the deepest red Colour in that Region.

And by the same Argument the Rays, which have intermediate Degrees of Refrangibility, shall come most copiously from Drops between E and F, and so strike the Senses with the intermediate Colours, in the Order which their Degrees of Refrangibility require; that is, in the Progress from E to F, or from the Inside of the Bow to the Outside, in this Order, *Violet, Indico, Blue, Green, Yellow, Orange, Red*; though the Violet, by the Mixture of the white Light of the Clouds will appear faint, and incline to a Purple.

And since the Lines OE, OF may be situated any where in the abovementioned conical Surface; what is said of the Drops and Colours in these Lines is to be understood of the Drops and Colours throughout the whole Superficies. Thus is the primary or *inner Bow* formed.

As to the *secondary* or *fainter Bow*, usually surrounding the former; in assigning what Drops would appear coloured, we exclude such as Lines drawn from the Eye, making Angles a little greater than 40° Deg. $2'$ Min. should fall upon; but not such as should contain Angles much greater.

For, if an indefinite Number of such Lines be drawn from the Spectator's Eye, some whereof make Angles of 50° Deg. $57'$ Min. with the Line of Aspect; *e. gr.*

OG, otherwise Angles of 54° Deg. $7'$ Min. *e. gr.* OH; those Drops whereon these Lines fall, must of Necessity exhibit Colours, particularly those of 50° Deg. $57'$ Min.

E. gr. the Drop G will appear red, the Line GO being the same with an effectual Ray; which after two Reflections and two Refractions, exhibits a red Colour. Again, those Drops which receive Lines of 54° Deg. $7'$ Min. *e. g.* the Drop H will appear Purple, the Line OH, being the same with an effectual Ray, which after two Reflections and two Refractions, exhibits Purple.

Now there being a sufficient Number of these Drops, it is evident there must be a second *Rainbow*, formed after the like Manner as the first.

Thus Sir *Isaac Newton*; in the least refrangible Rays, the least Angle at which a Drop can send effectual Rays after two Reflections, is found by Computation to be 50° Deg. $57'$ Min. and in the most refrangible the least Angle is found 54° Deg. $7'$ Min.

Suppose then O the Place of the Eye, as before, and POG, POH to be Angles of 50° Deg. $57'$ Min. and 54° Deg. $7'$ Min; and these Angles to be turned about their common Side OP, with their other Sides OG, OH, they will describe the Verges or Borders of the *Rainbow* CHDG.

For if GH be Drops placed any where in the conical Superficies described by OG, OH, and be illuminated by the Sun's Rays; the Angle SGO, being equal to the Angle POG or 50° Deg. $57'$ Min. shall be the least Angle, in which the then less refrangible Rays shall come most copiously to the Eye from the Drops in the Line OG, and strike the Senses with the deepest Red in that Region.

And the Angle SHO, being equal to POH, 54° shall be the least Angle, in which the most refrangible Rays after two Reflections, can emerge out of the Drops; and therefore those Rays should come most copiously to the Eye from the Drops in the Line OH, and so strike the Senses with the deepest Violet in that Region.

And by the same Argument, the Drops in the Region between G and H shall strike the Senses with the intermediate Colours, in the Order which their Degrees of Refrangibility require, that is, in the Progress from G to H, or from the Inside of the Bow to the Outer, in this Order; *Red, Orange, Yellow, Green, Blue, Indico, Violet.*

And since the Lines OG, OH, may be situated any where in the conical Surface; what is said of the Drops and Colours in those Lines, is to be understood of the Drops and Colours every where in these Superficies.

Thus are formed two *Bows*, an interior and stronger, by one Reflection; and an exterior and fainter by two; the Light becoming weaker and weaker by every Reflection.

Their Colours will lie in a contrary Order to one another, the first having the Red without, and the Purple within; and the second, the Purple without and Red within, and so of the rest.

This Doctrine of the *Rainbow* is confirmed by an easy Experiment; for upon hanging up a Glass Globe full of Water in the Sunshine, and viewing it in such a Posture as that the Rays which come from the Globe to the Eye may, with the Sun's Rays, include an Angle either of 42° , or 50° ; if, *e. gr.* the Angle be about 42° , the Spectator supposed at O, will see a full red Colour in that Side of the Globe opposite to the Sun, as at F. And if that Angle be made a little less, suppose by depressing the Globule to E, the other Colours, Yellow, Blue, and Green, will appear successively in the same Side of the Globe, also exceedingly bright.

But if the Angle be made about 50° , suppose by raising the Globule G there will appear a red Colour in that Side of the Globe towards the Sun, though that somewhat faint; and if the Angle be made greater, suppose by raising the Globe to H, the Red will change successively to the other Colours, Yellow, Green, and Blue.

The same Thing is observed in letting the Globe rest, and raising or depressing the Eye to make the Angle of a just Magnitude. This is called an *artificial Rainbow*.

Des Cartes was the first who took the Dimensions of
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the *Rainbow*, and determined the Diameter thereof, by laying it down, that the Magnitude of the *Bow* depends on the Degree of Refraction of the Fluid, and assuming the Ratio of the Sine of Incidence to that of Refraction, to be in Water as 250 to 187.

But Dr. *Halley* has since, in the *Philosophical Transactions*, given us a simple direct Method of determining the Diameter of the *Rainbow* from the Ratio of Refraction of the Fluid being given; or *vice versa*; the Diameter of the *Rainbow* being given to determine the refractive Power of the Fluid. The Praxis is as follows:

First, 'The Ratio of Refraction being given, to find the Angles of Incidence, and Refraction of a Ray which becomes effectual after any given Number of Reflections.' Suppose any given Line, as *AC* (Optic. fig. 17.) which divide in *D*, so as that *AC* be to *AD*, in the Ratio of Refractions; and again divide it in *E*, so as *AC* be to *AE*, as the given Number of Reflections increased by what Unity is to Unity; with the Diameter *CE* describe a Semicircle *CBE*, and from the Center *A* with the Radius *AD*, describe an Arch *DB* intersecting the Semicircle in *B*: Then drawing *AB*, *CB*, *ABC* or its Complement to two right Angles, will be the Angle of Incidence, and *ACB* the Angle of Refraction required.

Secondly, 'The Ratio of Refraction and any Angle of Incidence being given, to find the Angle which a Ray of Light emerging out of a refracting Sphere, after a given Number of Reflections, makes with the Line of Aspect, or an incident Ray; and consequently to find the Diameter of the *Rainbow*.' The Angle of Incidence and the Ratio of Refraction being given, the Angle of Refraction is given; which Angle being multiplied by double the Number of Reflections increased by 2, and double the Angle of Incidence subtracted from the Product, the Angle remaining is the Angle sought.

Thus supposing the Ratio of Refraction to be, as Sir *Isaac Newton* has determined it, viz. as 108 to 81, in the red Rays, as 109 to 81 for the blue Rays, &c. the preceding Problem will give the Distance of the Colours in the

1st. Rainbow	{ Red, 42° 11'	} the Spectator's Back being turn'd to the Sun.
	{ Violet, 40 16	
2d. Rainbow	{ Red, 50 58	}
	{ Violet, 54 9	

If the Angle made by a Ray after three or four Reflections, were required, and therefore the Diameter of the third and fourth *Rainbow* (which are scarce ever seen, by Reason of the great Diminution of the Rays, by so many repeated Reflections) they will be found,

3d. Rainbow	{ Red, 41° 37'	} the Spectator being turn'd towards the Sun.
	{ Violet, 37 9	
4th. Rainbow	{ Red, 43 52	}
	{ Violet, 49 34	

Hence the Breadth of the *Rainbows* is easily found: For the greatest Semi-diameter of the first *Bow*, i. e. from Red to Red, being 42°, 1', and the least, viz. from Violet to Violet, 40°, 16'; the Breadth of the *Fascia* or *Bow*, measured a-cross from Red to Violet, will be 1°, 45'; and the greatest Diameter of the second *Bow*, being 54°, 9', and the least 50°, 58', the Breadth of the *Fascia* will be 3°, 10'; and hence the Distance between the two will be found 8°, 15'.

In these Measures the Sun is only esteemed a Point; wherefore as its Diameter is really about 30', so much must be added to the Breadth of each *Fascia* or *Bow*, from Red to Violet, and so much be subtracted from the Distance between them.

This will leave the Breadth of the primary *Bow*, 2°, 15'; that of the secondary *Bow*, 3°, 40'; and the Interval between the two *Bows* 8°, 25'; which Dimensions deduced from Calculation, Sir *Isaac Newton* assures us from his own Observations, agree very exactly with those found by actual Mensuration in the Heavens.

From this Theory of the *Rainbow*, all the particular Phenomena thereof are easily deduced: Hence we see why the *Iris* is always of the same Breadth; by Reason the intermediate Degrees of Refrangibility of the Rays be-

tween Red and Violet, which are its extrem Colours are always the same.

2. Why it is more distinctly terminated on the Side of the Red, than on that of the Violet? There being no efficacious Rays in the Space adjoining to the red Drops, i. e. to the Space between the *Bows*; whence it terminates abruptly; whereas in the Space on the Side of the Violet ones, there are some Rays emitted to the Eye, which though too feeble to affect it strongly, yet have this Effect, that they soften the violent Edge insensibly, so that it is difficult to determine precisely where it terminates.

3. Why the *Bow* shifts its Situation as the Eyes does, and, as the popular Phrase has it, *flies those who follow it, and follows those that fly it*? The colour'd Drops being disposed under a certain Angle about the Line of Aspect, which is different in different Places: Whence, also, it follows, that every different Spectator sees a different *Bow*.

4. Why the *Bow* is sometimes a large Portion of a Circle, sometimes a less? Its Magnitude depending on the greater or less Part of the Surface of the Cone, above the Surface of the Earth at the Time of its Appearance; and that Part being greater or less, as the Line of Aspect is more incline or oblique to the Surface of the Earth; which Inclination or Obliquity is greater as the Sun is higher; whence also it follows, that the higher the Sun the less the *Rainbow*.

5. Why the *Bow* never appears when the Sun is above a certain Altitude? The Surface of the Cone wherein it should be seen, being lost in the Ground, at a little Distance from the Eye, when the Sun is above 42° high.

6. Why the *Bow* never appears greater than a Semicircle on a Plane? Since be the Sun never is low, and even in the Horizon; the Center of the *Bow* is still in the Line of Aspect; which in this Case runs along the Earth, and is not at all raised above the Surface. Indeed if the Spectator be placed on a very considerable Eminence, and the Sun in the Horizon; the Line of Aspect wherein the Center of the *Bow* is, will be notably rais'd above the Horizon (considering the Magnitude of the Circle whereof the *Bow* uses to be a Part.) Nay, if the Eminence be very high, and the Rain near, it is possible the *Bow* may be an entire Circle.

7. How the *Bow* may chance to appear inverted, i. e. the concave Side be turn'd upwards? To wit, a Cloud happening to interrupt Rays, and prevent their shining on the upper Part of the Arch: In which Case only the lower Part appearing, the *Bow* will seem as if turn'd upside down; which probably has been the Case in several Prodigies of this Kind related by Authors. Indeed the *Bow* may appear inverted from another Cause: For if when the Sun is 41°, 46' high, his Rays fall upon the smooth Surface of some spacious Lake, in the Middle whereof a Spectator is placed; and if at the same Time there be Rain falling to which the Rays may be reflected from the Lake; it will be the same as if the Sun should shine below the Horizon, and the Line of View be extended upwards: Thus the Surface of the Cone wherein the colour'd Drops are to be placed, will be wholly above the Surface of the Earth: But since the upper Part will fall among the unbroken Clouds, and only the lower Part be found among the Drops of Rain, the Arch will be inverted.

8. Why the *Bow* sometimes appears inclined? The accurate Roundness of the *Bow* depending on its great Distance, which prevents us of judging of it exactly: If the Rain, which exhibits it, chance to be much nearer, we shall see its Irregularities; and if the Wind in that Case drives the Rain so as the higher Part be further from the Eye than the lower, the *Bow* will appear inclined.

9. Why the Legs of the *Rainbow* sometimes appear unequally distant? If the Rain terminate on the Side of the Spectator, in a Plane so inclined to the Line of Aspect, as to make an acute Angle on the left Hand, and an obtuse Angle on the right; the Surface of the Cone which determines what Drops will appear, will fall upon them in such a Manner, as that those on the left Hand will appear further from the Eye than those on the right. For the Line of Aspect being perpendicular to the Plane of the *Bow*, if you suppose two

two rectangular Triangles, a Right and Left, the Cathetus of each to be the Line of View, and the Base of the Semidiameter of the Bow inclined as above: It is evident, since those Angles of the Triangles next the Eye, must always be the same (*viz.* 43° in the inner Bow) the Basis of the right hand Triangle will appear much longer than that of the Left.

The Moon sometimes also exhibits the Phænomenon of an *Iris* or *Bow*; by the Refraction of her Rays in the Drops of Rain in the Night-time.

Aristotle says, he was the first that ever observed it; and adds, that it never happens, *i. e.* is never visible, but at the Time of the Full Moon; her Light at other Times being too faint to affect the Sight after two Refractions and one Reflection.

The *Lunar Iris* has all the Colours of the *Solar*, very distinct and pleasant; only faint, in Comparison of the other, both from the different Intensity of the Rays, and the different Disposition of the Medium.

In that mentioned *Philos. Transact.* N^o. 331. Mr. *Thoresby* observes, the Largeness of the Arch was not so much less than that of the Sun, as the different Dimensions of their Bodies, and their Distances from the Earth should seem to require: But as to its Interiness and the Beauty of its Colours, it was admirable. It continued about 10 Minutes before the Interposition of a Cloud hindered its Observation.

The *Marine* or *Sea-Rainbow*, is a Phænomenon sometimes observed in a much agitated Sea, when the Wind sweeping Part of the Tops of the Waves, carries them aloft, so that the Sun's Rays falling upon them, are refracted, &c. as in a common Shower, and paint the Colours of the *Bow*.

F. Bourzes, in the *Philosophical Transactions* observes, that the Colours of the marine *Rainbow* are less lively, distinct, and of less Duration than those of the common *Bow*; that there are scarce above two Colours distinguishable, a dark Yellow on the Side next the Sun, and a pale Green on the opposite Side.

But these *Bows* exceed as to Number, there being sometimes 20 or 30 Suns together; they appear at Noon-day, and in a Position opposite to that of the common *Bow*, *i. e.* the concave Side is turned upwards, as indeed it is necessary it should be, from what we have shewn in accounting for the Phænomena of the solar *Bow*.

To this Class of *Bows* may be referred a Kind of *white colourless Rainbows*, which *Mentzelius* and others affirm to have seen at Noon-day. *M. Mariotte* in his fourth *Essai de Physic*, says, these *Bows* are formed in Mists, as the others are in the Showers; and adds, that he has seen several both after Sun-rising and in the Night.

The Want of Colours he attributes to the Smallness of the Vapours which compose the Mist; we should rather account for it from the exceeding Tenuity of the little *Vesiculæ* of the Vapour; which being in effect little watery Pellicles bloated with Air, the Rays of Light undergo but little Refraction, in passing out of Air into them; too little to separate the differently coloured Rays, &c. Hence the Rays reflected from them.

M. Robault mentions coloured *Rainbows* on the Grass, formed by the Refractions of the Sun's Rays on the Morning Dew.

HALO, called also *Corona*, is a *Meteor* in Form of a luminous Ring or Circle. It differs from the *Rainbow* in that it is almost always of one Colour, and is oftner round the Moon than round the Sun.

The *Halo* is supposed to arise from a Refraction of the Rays of Light in their passing through the fine, rare *Vesiculæ* of a thin *Nubecula* or Vapour, towards the Top of our Atmosphere; which Account is confirmed hence, that a Quantity of Water being thrown up against the Sun, as it breaks and disperses into Drops, it forms a Kind of *Hale* or *Iris*, exhibiting the Colours of the natural ones.

M. Huygens supposes *Halo's*, or Circles round the Sun, to be formed by small round Grains of a Kind of *Hail*, made up of two different Parts, one of which is opaque, and inclosed in the other, which is transparent; which is the Structure actually observed in *Hail*.

After the same Manner he accounts for the *Parbelia*, only that there he imagines the icy Grains of an oblong Figure, and rounding at the Ends, like Cylinders with

round convex Tops.—Where some of these Cylinders are in an erect Position, the Circle they form will be white, by reason of the Refraction of the Rays of the Sun on the Surface of these Cylinders.

He proceeds to account for the coloured *Halo's* and *Parhelias*, from the same Hypothesis, and produces an Experiment of a Glass Cylinder, a Foot long, having within it an opaque Kernel (which was a Cylinder of Wood) and the ambient Space filled with Water: This Cylinder being exposed to the Sun, and the Eye disposed in a proper Place, the several successive Reflections and Refractions necessary to produce such an Effect did plainly appear.

The Light which comes through Drops of Rain, by two Refractions, without any Reflection, *Sir Isaac Newton* observes, ought to appear strongest at the Distance of about 26 Degrees from the Sun, and decay gradually both Ways, as the Distance from him increases and decreases; and the same is to be understood of Light transmitted through sperical *Hail-Stones*. Add, that if the *Hail* be a little flatted, as is often the Case, the Light transmitted may grow so strong at a little less Distance, than that of 26 Degrees, as to form a *Halo* about the Sun or Moon; which *Halo*, as often as the *Hail-Stones* are duly figured, may be coloured; and then it must be red within by the least refrangible Rays, and blue without by the most refrangible ones, as especially if the *Hail-Stones* have opaque Globules of Snow in their Center to intercept the Light within the *Halo*, as *Huygens* has observed, and make the Inside thereof more distinctly defined than it would otherwise be.

Such *Hail-Stones*, though sperical, by terminating the Light by the Snow, may make a *Halo* red within, and colourless without, and darker in the Red than without, as *Halo's* us'd to be: For of those Rays which pass close by the Snow, the Rubiform will be less refracted, and so come to the Eye in the directest Lines.

PARHELIUM, or *Parbelion*, is a mock Sun or Meteor, in Form of a very bright Light, appearing aside of the Sun, formed by the Reflection of his Beams, in a Cloud properly posited.

The *Parbelias* usually accompany the *Coronæ* or luminous Circles; are placed in the same Circumference, and at the same Height. Their Colours resemble those of the *Rainbow*, the Red and Yellow on the Side towards the Sun, and the Blue and Violet on the other. Though there are *Coronæ* sometimes seen entire, without any *Parbelia*; and *Parbelias* without *Coronæ*.

Parbelias, are sometimes double, triple, &c. In the Year 1629, was seen at *Rome* a *Parbelia* of five Suns; and in 1666, another at *Arles* of six.

M. Des Cartes is of Opinion, *Dissert. ultim. Meteor.* that *Parbelias* are formed by the Sun, painting his Image either double or triple, &c. in a high Circle drawn round a congealed and polished Cloud, by Means of a reflected or refracted Light; for by the Rays being vibrated from the Sun into that congealed Cloud, the Light being remitted, either by Reflection as in a Meteor, by Refraction as in Glass Lens's, must exhibit that large and white Circle, in which are seen one or several Mock-suns.

M. Mariotte accounts for the Appearance of *Parbelias*, from an Infinity of little Parcels of Ice floating in the Air, which multiply the Image of the Sun, either by refracting or breaking his Rays, and thus making him appear where he is not; or by reflecting them and serving as Mirrors.

The known Laws of Reflection and Refraction have given a Handle for geometrizing on these Phænomena's, and *M. Mariotte* has determined the precise Figure of the little *Isicles*, and their Situation in the Air, the Size of the *Coronæ* or Circles which accompany the *Parbelias*, and the Colours wherewith they are painted, by a geometrical Calculus.

M. Huygens accounts for the Formation of a *Parbelion*, in the same Manner as for that of the *Halo*, *viz.* by supposing a Number of small icy Cylinders with opaque Kernels, carried in the Air, neither in a perpendicular nor parallel Direction, but inclined to the Horizon in a certain Angle, nearly a half one.

To make the Effect of these Cylinders manifest, *M. Huygens* produced to the Academy of *Paris* a Glass Cylinder

Cylinder a Foot long, with an opaque Cylinder in the Middle, and the ambient Space filled with Water and transparent Ice, which Cylinder being exposed to the Sun, and the Eye put in the requisite Situation, there were successively seen all the Reflections and Refractions necessary for the Phænomena of the *Parbelia*.

The *PARASELENE*, or *Mock-Moon*, is a Meteor or Phænomenon encompassing or adjacent to the Moon, in Form of a luminous Ring; wherein is sometimes observed one, sometimes two apparent Images of the Moon.

The *Paraselenes* are formed after the same Manner as the *Parbelia*.

APPENDIX.

Of the Flux and Reflux, or Ebb and Flow of the Sea; of Earthquakes, &c.

Note, That I think it not improper to join to this Treatise of the different Phænomena which appear in the Air, a concise Dissertation, on those which appear on Earth, and particularly on that extraordinary one of the *Flux* and *Reflux* of the Sea, the Cause thereof has puzzled the greatest Philosophers, and of which we have not yet a very great Certitude.

The *FLUX* and *REFLUX*, or *Ebb* and *Flow* of the Sea, are two periodical Motions of the Waters of the Sea.

To speak pertinently of this grand Phænomenon, we must observe, that there are, not only one, but several Motions in the Sea. For, 1. There is that continual Flux, whereby it is carried from East to West, occasion'd by the circumfluent Breezes, which together with the Air, are always carried the same Way, or towards the same Part. This Flux is very sensible, particularly in the Torrid Zone; and which being reflected in a different Manner, by the Opposition of the different Part of the Earth, form those *Currents*, as they are called, which carry off Ships, even against the Violence of the Wind. Those who sail from the *Indies* to *Africa*, or from *Africa* to the Coast of *Brazil*, have an evident Proof of that Motion, for they sail then with a far greater Celerity, than when they return from *Africa* to the *Indies*, or from *Brazil* to *Africa*.

But where those *Currents* meet together in some Gulph, *viz.* in that of *Mexico*, there they stop, and after they have been assembled into a great Heap of Waters, they are forced to retire back or ebb, not directly towards those Parts whence they came, and whence flow, continually, new Waters, but Northward and Eastward.

But however, nothing in all Ages has more puzzled the Philosophers, than the *Flux* and *Reflux* of the Sea; though they almost all agree at present, that it must be attributed to the Moon; and though it could be perhaps very well explain'd by the Hypothesis of *Tycho Brahe*, we'll notwithstanding join that of *Des Cartes* with the rest, he being the first of all who has adapted with more Accuracy, that Phænomenon to the Motions of the Moon.

Therefore let the Earth be in our Vortex, which revolved every 24 Hours round its Center, according to the Series of the Signs, is by its annual Motion turn'd round the Sun placed in the Middle of the Vortex. Let also be round the Earth an elliptical Vortex, intercepted between the Heaven of *Mars* and *Venus*, in which the Moon accomplishes its monthly Motion; for we have already observed in our Treatise of *Astronomy*, that the Moon accomplishes its monthly Motion, in an elliptical, not in a spherical Vortex.

Now for a greater Perspicuity, let's place the Earth environ'd on all Sides with the Sea; then the Space intercepted between the Moon and the Water will be contracted, because of the Presence of the Moon. Therefore the æthereal Substance contain'd in that Space, will flow with more Celerity there, than in any other Space where the Moon is not present; and consequently press with more Violence the Water in that Part, than any where else; whence the *Flux*.

But as that Point pressed by the Moon, must be carried in the Space of six Hours, by the diurnal Motion of the Earth, into another, where the Moon is not

present; and where, consequently, the Waters are not pressed by the æthereal Substance flowing with more Celerity, because of the Presence of the Moon; then it is necessary, that the Water, which by the Pressure, had been forced to flow, should fall, by its own Weight, towards the same Place, whence it had flowed first: And thus, in the Space of about six Hours, the *Reflux* should happen.

Again, after six other Hours, the first Point will arrive by the same Motion to the third Point; and then there will be another *Flux*; for the Moon, if not by itself, at least by the interjected æthereal Substance, presses that Part underneath it, because of the contracted Space, the Earth recedes a little towards the opposite Part; which must happen the easier because the Earth is then in Equilibrio, between the Parts of the ambient Body. Whence the Space in which the æthereal Substance is moved, is contracted, not only between the Moon and the Point, but likewise in the opposite Part; therefore a Pressure of the Waters is made in both Parts; and there happens a *Flux* or *Flow* in both Parts, at the same Time.

Lastly, when the first Point is arrived at a fourth Point or Station, the Waters ebb again, as they did in the second Station: Thus the Sea flows and ebbs twice every Day: So that, notwithstanding the Flux happens later every Day by about 50 Minutes; because the Moon by its proper Motion from West to East, runs every Day very near the 28th Part of its Orb: Whence it happens, that it does not return to the same Point or Meridian of the Earth, till after 24 Hours and about 50 Minutes.

Then as the Heaven of the Moon contracted between the Orbs of *Mars* and *Venus*, assumes an elliptical Figure; and forms two Diameters, *viz.* one great, and the other small; it follows hence, that the Moon has a greater Power to press the Waters, when it is in the less Diameter, *viz.* about the Time of its Conjunction and Opposition with the Sun, towards its Disappearing and Intervals, than when in the greater Circle, *viz.* towards the Quadratures: Therefore the Tides must be greater in the *Syziges*, or in the New and Full Moon, or at least, near the New and Full Moon.

Lastly, when the Moon in the Time of the Equinoxes, is either in Conjunction with the Sun, or in Opposition to it, *viz.* when it is in *Aries* or in *Libra*; for then it is more directly incumbent on the terraqueous Globe, than in the Time of the Solstices, when it is in *Cancer* or *Capricorn*: And therefore the æthereal Substances, intercepted between the Moon and the Earth, act with more Power on the Waters. For the Countries which approach nearer the Poles, by Reason of the Convexity of the terraqueous Globe, are less subject to the Impression of that æthereal Substance, or rather, in a great Part avoid it. Whence it happens, that the Tides about the Equinoxes, or in the Spring and Autumn, are much greater than in the Summer and Winter. Thus far of *Des Cartes's* System of the *Flux* and *Reflux* of the Sea.

Dr. *Halley* has deduced a Theory of the Tides from the *Newtonian* Principles, in the following Manner: And says,

1. That as the Surface of the Earth and Sea is naturally globular; if we suppose the Moon perpendicularly over the Surface of the Sea; it is evident, that the Water nearest the Moon will gravitate towards it more than any other Part of the Earth and Sea in that Hemisphere. That Part of the Waters therefore must by this Means be raised towards the Moon, *i. e.* it will be lighter than usual, and therefore will swell there.

For the same Reason, the Water the most remote from the Moon, will gravitate less towards the same, than any other Part of the Earth or Sea in the same Hemisphere. The Water here, therefore, must approach less towards the Moon than any other Part of the Globe, *i. e.* it must be raised contrariwise, as being lighter than usual, and will therefore swell in that remote Part.

By this Means, the Surface of the Ocean must necessarily form itself into a spheroidal or oval Figure; having a Diameter longer than the other, as already observed in *Des Cartes's* System. And thus the Moon stations

shifting her Position in her diurnal Motion round the Earth, this Oval of Water must shift with her; by which Means are effected those two Floods and Ebbs, observable every 25 Hours.

2. Since in the Conjunctions and Oppositions of the Sun and Moon, the Gravitation of the Water to the Sun conspires with its Gravitation towards the Moon; but in the Quadratures, the Water raised by the Sun is depressed by the Moon: Hence it is that the *Tides* are greater in the *Syzyges* than in the *Quadratures*.

That in effect there are two *Tides* every natural Day, from the Action of the Sun, as there are in the lunar Day from that of the Moon; all governed by the same Laws: Only those caused by the Sun are much less than those caused by the Moon; because though the Sun be ten thousand Times bigger than both the Earth and Moon, yet he is at so immense Distance, that the Earth's Semi-diameter bears no Proportion thereto.

Hence the different *Tides* depending on the particular Actions of the Sun and Moon, are not distinguished but confounded. The lunar Tide is somewhat changed by the Action of the Sun; and this Change varies every Day, by reason of the Inequality between the natural and lunar Day.

3. Since the greatest *Tides* about the Equinoxes (*viz.* those happening in the *Syzyges*) arise from the Sun and Moon being in the Equinoctial, and those about the Solstices from the Sun and Moon being in the Tropicks; for this Reason those greatest *Tides* about the Equinoxes are greater than those about the Solstices; since the greater the Circle is, wherein the Waters move, the greater is their Agitation. And if the Moon stood still in the Pole, the Swelling would become immovable above the Pole, and the high Water be fixed therein.

4. Since the *Tides* are somewhat changed by the Libration of the Waters, which us'd to retain a Motion impressed on them for some Time; for this Reason the highest *Tides* are not precisely in the very Conjunction and Opposition of the Moon, but two or three *Tides* afterwards.

5. Since the Sun is somewhat nearer the Earth in Winter than in Summer; hence it is that the greatest equinoctial *Tides* are observed to be a little before the vernal Equinox, and a little after the autumnal one.

6. Since the greatest of the two *Tides* happening in every diurnal Revolution of the Moon, is that wherein the Moon is nearest the Zenith or Nadir: For this Reason, while the Sun is in the northern Signs, the greater of the two diurnal *Tides* in our Climates, is that arising from the Moon above the Horizon; when the Sun is in the southern Signs, the greatest is that arising from the Moon below the Horizon.

7. Such would the *Tides* regularly be, if the Earth were covered with Sea very deep; but by reason of the Shoalness of some Places, and the Narrowness of the Straits in others, by which the *Tides* are propagated, there arises a great Diversity in the Effects not to be accounted for, without an exact Knowledge of all the Circumstances of the Place; as the Position of the Land, and the Breadth and Depth of the Channels, &c.

For a very slow and imperceptible Motion, of the whole Body of Water, where it is (for Example) two Miles deep, will suffice to raise its Surface 10 or 12 Feet in a *Tide's* Time; whereas if the same Quantity of Water were to be conveyed through a Channel of 40 Fathom deep, it would require a very great Stream to effect it in so large Inlets as are the Channel of *England*, or the *German Ocean*; whence the Tide is found to set strongest in those Places where the Sea grows narrowest, the same Quantity of Water being in that Case to pass through a smaller Passage.

This is most evident in the *Streights* between *Portland* and *Cape de la Hogue* in *Normandy*, where the Tide runs like a *Sluice*; and would be yet more between *Dover* and *Calais*, if the Tide coming round the Island did not check it.

And this Force being once impressed between the Water, continues to carry it above the Level of the ordinary Height in the Ocean, particularly where the Water meets a direct Obstacle, as it does in *St. Malo*; and where it enters into a long Channel, which running far into the Land, grows very strait at its Extremity,

as it does at the *Severn Sea*, at *Chepstow*, and *Bristol*.

This Shoalness of the Sea, and the intercurrent Continents, are the Reasons that in the open Ocean, High-water is not at the Time of the Moon's Appulse to the Meridian, but always some Hours after it, as it is observed upon all the western Coast of *Europe* and *Africa*, from *Ireland* to the Cape of *Good Hope*; in all which a South-west Moon makes High-water, and the same is reported to hold in the West of *America*.

It would be endless to recount all the particular Solutions, which are only Corollaries from this Doctrine; as why the Lakes and Seas, such as the *Caspian Sea*, and the *Mediterranean Sea*, the *Black Sea*, and *Baltick*, have no sensible *Tides*: For Lakes having no Communication with the Ocean, can neither increase or diminish their Water, whereby to rise and fall; and Seas that communicate by such narrow Inlets, and are of so immense an Extent, cannot in a few Hours Time receive and empty Water to raise or sink their Surface any Thing sensibly.

To demonstrate the Excellency of this Doctrine, the Example of the *Tides* in the Port of *Tonquin* in *China*; which are so extraordinary, and different from all others we have yet heard of, may suffice. In this Port there is but one Flood and Ebb in 24 Hours, and twice in each Month; *viz.* when the Moon is near the Equinoctial, there is no Tide at all, but the Water is stagnant; but with the Moon's Declination there begins a Tide, which is greatest when she is in the tropical Signs; only with this Difference, that when the Moon is to the Northward of the Equinoctial, it flows when she is above the Earth, and ebbs when she is under, so as to make High-water at Moon-setting, and Low-water at Moon-rising: But on the contrary, the Moon being to the Southward, makes High-water at Rising, and Low-water at Setting, it ebbing all the Time she is above the Horizon.

The Cause of this odd Appearance is suggested by *Sir Isaac Newton*, to arise from the Concurrence of two *Tides*, the one propagated in six Hours out of the great *South Sea* along the Coast of *China*, the other out of the *Indian Sea* from between the Islands, in twelve Hours, along the Coast of *Malacca* and *Cambaya*.—The one of these *Tides* being produced in North Latitude, is, as has been said, greater, when the Moon being to the North of the Equator, is above the Earth; and less, when she is under the Earth.—The other of them, which is propagated from the *Indian Sea*, being raised in South Latitude, is greater when the Moon declining to the South, is above the Earth, and less when she is under the Earth: So that of these *Tides*, alternately greater and lesser, there come always successively two of the greater, and two of the lesser together every Day, and the High-water falls always between the Arrival of the two greater Floods; and the Moon coming to the Equinoctial, and the alternate Floods becoming equal, the Tide ceases, and the Water stagnates; but when she has passed to the other Side of the Equator, those Floods which in the former Order were the least, now becoming the greater, that which before was the Time of the High-water, now becomes the Low-water, and the Converse: So that the whole Appearance of these strange *Tides* are, without any forcing, naturally deduced from these Principles, and is of great Argument, say the *Newtonians*, for the Certainty of the whole Theory.

The next considerable Phænomenon which happens in the terraqueous Globe, is an *Earthquake*.

EARTHQUAKE, is a vehement Shake or Agitation of some considerable Place, or Part of the Earth, from natural Causes; attended with a huge Noise like Thunder, and frequently with an Eruption of Water, or Fire, or Smoak, or Wind, &c.

Earthquakes are the greatest and most formidable Phænomena of Nature.—*Aristotle* and *Pliny* distinguish two Kinds, with respect to the Manner of the Shake, *viz.* a Tremor, and a Pulse; the first being horizontal, in alternate Vibrations, compared to the Shaking of a Person in an Ague; the second perpendicular, up and down: Which latter Kind are also called by *Aristotle*, *Βαφοραι*, from the Resemblance of their Motion to that of Boiling.

Agricola increases the Number, and makes four Kinds, which

which *Albertus Magnus* again reduces them to three; viz. *Inclination*, when the Earth librates alternately from Right to Left, by which Mountains have been sometimes brought to meet, and clash against each other (but on this we cannot depend). *Pulsation* when it beats up and down like an Artery; and *Trembling*, when it shakes and quavers every Way like a Flame.

Naturalists are divided on the Causes of *Earthquakes*. Some ascribe *Earthquakes* to Water, others to Fire, and others to Air; and all of them with a great Appearance of Reason. To conceive which it is to be observed, that the Earth every where abounds in huge subterraneous Caverns, Veins, and Canals, particularly about the Roots of Mountains: That of these Cavities, Veins, &c. some are full of Water, whence are composed Gulphs, Abysses, Springs, Rivulets; and others full of Exhalations; and that some Part of the Earth are replete with Nitre, Sulphur, Bitumen, Vitriol, &c.

This premised. Some are of Opinion, 1. That the Earth itself may be the Cause of its own shaking; when the Roots or Basis of some large Mass being dissolved, or wore away by a Fluid underneath, it sinks into the same, and with its Weight occasions a *Tremor* of the adjacent Parts; produces a Noise, and frequently an Inundation of Water. This, in my Sentiment, has not a very great Appearance of Truth: For if it was even probable that there could be underneath large Masses of the Earth, a Fluid capable to dissolve them, those Masses sinking under their own Weight, or the Impulsion of the ambient Atmosphere, could cause no *Tremor* but in the very Spot where they sink, and not even in the adjacent Parts the nearest to them; for if a *Tremor* should happen in the adjacent Parts, it would proceed either from the close Cohesion of the sinking Mass with those adjacent Parts, which in sinking could not be tore from them without shaking them, or from the Instability of the Basis on which it sinks; which Basis being common between the Mass sinking, and the other Parts which remain standing should be shaken first, and thereby communicate its Tremor to the standing Parts; but it is not probable, that the Mass sinking could be capable to shake the neighbouring Parts by its being torn from them; since if the Cohesion was ever so great, or so intimate with the adjacent Parts, the opposite Masses between which there must be as intimate an Union, and supposed of a much larger Volume than the sinking Mass, are capable to keep them steady and unmoveable; let the Separation be ever so violent: As to the Basis on which the sinking Mass falls, it exceeds likewise so far in Bigness the sinking Mass, and its placed in so firm a Foundation, that either it does not receive any *Tremor*, or if it be sensible of any it must be so small, that it is imperceptible, and consequently cannot be communicated to the other huge Masses placed upon it.

2. That the subterraneous Waters may occasion *Earthquakes*, by their overflowing, cutting out new Courses, &c. and that the Waters being heated, and rarified by the subterraneous Fires, may emit Fumes, Blasts, &c. which by their Action, either on the Water, or immediately on the Earth itself may occasion great Successions. This second Opinion appears to me more improbable still than the first; for we have no Experience which can confirm, that the overflowing of Waters can cause such Convulsions in Nature as *Earthquakes* are; it is true, that their Overflowing, when very violent, carries off all they meet with; but there is a great Difference between an Overflowing, which is effected by Waters forcing a Passage through some Place where they were confined, or finding one already open; and fermenting in the Entrails of the Earth with that Violence which would be necessary to cause *Earthquakes*. It cannot be reasonably supposed besides, that there could be so monstrous a Heap of Waters, assembled together in one particular subterraneous Place, more than in another, to produce such prodigious Effects; since the Earth being very spongy, the Water meets but with few Obstacles to its being percolated throughout its whole Substance; and if we could think otherwise, we should attribute the same Elasticity to Water confined in a Place, as daily Experience shews us in Gunpowder set on Fire in a Mine, which is false, since according to Sir *Isaac Newton*, the Elasticity of Fluids consists only in their Par-

ticles being all endowed with a centrifugal Force, i. e. of that Force whereby they fly off from one another, and are reciprocally proportional to the Distances of their Center; which Force cannot be much accelerated by the Air, whose Compression is weakened by the Interposition of those huge Masses which cover the Waters; and as it must be supposed besides, that such a monstrous Heap of Water which would be necessary to cause an *Earthquake*, could not be gathered together in the same Place at once, but only by Succession of Time; and not all resort thither from the same Place, but from several different Places, and some of them very distant ones; it is reasonable to suppose, that not only those different Sources, in their different Courses to their common Rendezvous, should contribute to enlarge their common Bed, on Proportion to the Waters it is to contain; but the Waters likewise assembled in it by Degrees, should by their perpetual Fluctuation work to the same Purpose; as we see daily Waters do to gain Ground, and not be too narrowly confined. As to the Fumes and Blasts emitted by the Water, supposed to be heated and rarified by the subterraneous Fires, being capable to occasion great Successions, it is even a Kind of Stupidity to imagine it; for those Vapours, if even there could be such a Thing, being deprived of a sufficient Quantity of Air necessary for their Rarifications, would have no greater Elasticity, than have those thick Fogs, which are so commonly seen over Lakes, Rivers, &c. and would soon be resolved into the same Fluid whence they were exalted; nay, they could not even rise so high as to be distinguished from one another.

3. That the Air may be the Cause of *Earthquakes*; for Air being a Collection of Fumes and Vapours raised from the Earth and Water; if it be pent up in too narrow Viscera of the Earth, the subterraneous, or its own native Heat, rarifying, and expanding it, the Force wherewith it endeavours to escape, may shake the Earth: Hence there arise divers Species of *Earthquakes*, according to the different Position, Quantity, &c. of the imprisoned Air. This seems much more reasonable than the two former Suppositions; and would very well account for the *Earthquakes*, if it was demonstrated at the same Time, that the Air which penetrates the Earth with great Facility, and pervades it with the same Facility, could be confined in some Part thereof, so as to be impossible for it to fly back through the same Places it came, which would be an Absurdity. The Example of a Mine cannot be brought to confirm this Sentiment; for there must be supposed a far greater Volume of Air in a Mine, than in the Meatus of the Earths, which consequently makes a greater in its Rarefaction by the Fire, to set itself free from the Place it had been confined in by Art, before it could have Time to search some other Issue.

Lastly, that Fire is a principal Cause of *Earthquakes*; both as it produces the afore said subterraneous Aura, or Vapour; and as this Aura, or Spirit, from the different Matter or Composition, whereof arise Sulphur, Bitumen, and other inflammable Matters, is kindled either from some other Fire it meets withal, or from its Collision against hard Bodies, or its Intermixture with other Fluids; by which Means bursting out into a greater Compass, the Place becomes too narrow for it; so that pressing against it on all Sides, the adjoining Parts are shaken; till having made itself a Passage, it spends itself in a Volcano, or burning Mountain.

This last Sentiment is very near that of Dr. *Lifter*, who says, that the material Cause of Thunder, Lightning, and *Earthquakes*, is one and the same, viz. the inflammable Breath of the Pyrites, which is a substantial Sulphur, and takes Fire of itself.

The Difference between these three terrible Phenomena's he takes only to consist in this; that this Sulphur in the former is fired in the Air; and in the latter under Ground: Which is a Notion that *Pliny* had long before him; *Quid enim*, says he, *aliud est in terra tremor, quam in nube tonitru?*

This he thinks abundantly indicated by the same sulphurous Smell being found in any Thing burnt with Lightning, and in the Waters, &c. cast up in *Earthquakes*, and even in the Air before and after them.

He adds, that they agree in the Manner of the Noise, which

which is carried on as in a Train fired; the one rowling and ratling through the Air, takes Fire as the Vapours chance to drive; as the other fired under Ground, in like Manner moves with a desultory Noise.

That Thunder, which is the Effect of the Trembling of the Air, caused by the same Vapours dispersed thro' it, has Force enough to shake our Houses; and why may not the Thunder and Lightning under Ground, in some vast Repositories there, he sees no Reason, especially if we reflect, that the Matter which composes the noisy Vapour above us, is in much larger Quantities under Ground.

Those who espouse Dr. Lister's Sentiment, say, that every Body knows that the Earth abounds in Cavities; and that these subterraneous Cavities are, at certain Times, and in certain Seasons, full of inflammable Vapours, the Damps in our Mines sufficiently witness, which fired, do every Thing as an *Earthquake*, save in a lesser Degree.

That it is highly probable that the Pyrites alone, of all the known Minerals, yields this inflammable Vapour; No Mineral or Ore whatsoever being sulphurous, but as it is wholly, or in Part, a Pyrites; and there being but one Species of Brimstone, at least in *England*, which the Pyrites naturally and only yields; that the Sulphur or natural Brimstone, which is found in and about the burning Mountains, is certainly the Effect of Sublimation; and those great Quantities of it said to be found about the Skirts of Volcano's, is only an Argument of the long Duration and Vehemence of those Fires; that possibly the Pyrites of the Volcano's or burning Mountains, may be more sulphurous than ours: And that indeed it is plain, that some of those in *England* are very lean, and hold but little Sulphur, others again very much; which may be one Reason why *England* is so little troubled with *Earthquakes*, and *Italy*, and almost round the *Mediterranean Sea* so very much: Though another Reason is, the Paucity of Pyrites in *England*.

That comparing our *Earthquakes*, Thunder, and Lightning, with theirs, it is observed, that there it lightens almost daily, especially in Summer-time; here seldom: There Thunder and Lightning is of long Duration, here it is soon over; there the *Earthquakes* are frequent, long and terrible, with many Paroxysms in a Day, and that for many Days; here very short, a few Minutes, and scarce perceptible. That to this Purpose the subterraneous Cavities in *England* are small, and few, compared with the vast Vaults in those Parts of the World; which is evident from the sudden Disappearance of whole Mountains and Islands.

This Sentiment of Dr. Lister, though very probable, is notwithstanding, at least in my Opinion, attended with several Difficulties; and some of the Reasons he attempts to support it with not at all satisfactory. For though I be ready to grant him, since he will have it so, that the material Cause of Thunder, Lightning, and *Earthquakes*, be one and the same, viz. the inflammable Breath of the Pyrites; the great Difficulty which he is not pleased to resolve, is in what Manner those Pyrites are set on Fire, unless he pretends to give us to understand, that those in the Air and those under Ground, which he takes to be of the same Nature, take also Fire in the same Manner; for to say that they take Fire of themselves, is to say nothing, unless it be demonstrated to render it credible. Besides, I utterly deny that either of them take Fire of themselves; for the Pyrites formed in the middle Region of the Air, and which he considers as the material Cause of Thunder being formed of the sulphurous and nitrous Particles exalted from the Vapours of the Earth, and of the Water, and condensed by the excessive Heat of the Sun, are also set on Fire by it, when brought to a certain Degree of Inflammability, as Gunpowder is render'd inflammable by the grinding and perfect Mixture of the Matter it is composed with, but remains inactive, till Fire be applied to it.—But the same Thing cannot be said of the subterraneous Pyrites, which, tho' they may be formed by the Heat of the Sun, that Heat notwithstanding being much impaired by the long Tracts it must run through, and the great Circumvolutions it is obliged to make before it arrives at the Places proper for the Formation of those Pyrites, cannot retain enough Force to set them on Fire; therefore that must

be effected by the violent Friction of their sulphurous Particles against harder Bodies, in their Coadunation; and the igneous Particle being violently agitated by the ambient Air, rarify that same Air, whereby being put into a violent Motion in its Turn; and restored to its native Elasticity, obstructed by earthly Particles it had loaded itself with, in its Passage through the Meatus of the Earth, and making the most violent Efforts to conquer all the Obstacles which oppose its Explosion, he throws thereby the incumbent Earth into those Convulsions we call *Earthquakes*, which are greater or lesser, and consequently more or less sensible, according to the larger or narrower Capacity of the Place where the Pyrites are kindled; for the more capacious is the Place, the less violent is the *Earthquake*, since the Air has more Room to extend itself; unless the Fire be so violent, and of so large a Volume, that by rarifying the Air to its greatest Perfection of Elasticity, it produces the same prodigious Effects as if it was confined in a narrower Place. As to what Dr. Lister says, that in the *Earthquakes*, the Earth is shaken in the same Manner Thunder shakes our Houses, I deny it as an Absurdity, since there is this wide Difference in it, that the Earth is shaken immediately in the excessive Rarefaction of the Air by the subterraneous Fire, without the intermediate Concurrence of any other Agent; and our Houses are only shaken by the ambient Atmosphere, violently agitated by the Thunder. And if *Earthquakes* are more frequent, and of a longer Duration in hot than in cold Climates, it is because the Sun having a greater Power in one than in the other, his Heat penetrates the Earth with a far greater Facility, to separate, sublimate, and condense the sulphurous Particles its Entrails abound with, and form the inflammable Pyrites above-mentioned.

Dr. Woodward gives us another Theory of *Earthquakes*: He endeavours to shew, that the subterraneous Heat or Fire (which is continually elevating Water out of the Abyss, to furnish the Earth with Rain, Dew, Springs, and Rivers) being stopped in any Part of the Earth, and so diverted from its ordinary Course by some accidental Glut, or Obstruction in the Pores or Passages, through which it used to ascend to the Surface, becomes by such Means preternaturally assembled, in a greater Quantity than usual into one Place, and therefore causes a great Rarefaction, and Intumescence of the Water of the Abyss; putting it into great Comotions and Disorders, and at the same Time making the like Efforts on the Earth; which being expanded upon the Face of the Abyss, occasions that Agitation and Concussion we call an *Earthquake*.

This Effort in some *Earthquakes*, he observes, is so vehement, that it splits and tears the Earth, making Cracks and Chasms in it, some Miles in Length, which open at the Instant of the Shock, and close again in the Intervals betwixt them; nay, it is sometimes so violent, that it forces the superincumbent Strata, breaks them all throughout, and thereby perfectly undermines, and ruins the Foundation of them; so that these failing, the whole Track, as soon as the Shock is over, sinks down into the Abyss, and is swallowed up by it; the Water whereof immediately rising up, and forming a Lake in the Place where the said Tract before was: That this Effort being made in all Directions indifferently, the Fire dilating and expanding on all Hands, and endeavouring to get Room, and make its Way through all Obstacles, falls as foul on the Water of the Abyss beneath, as on the Earth above, forcing it forth which Way soever it can find Vent or Passage, as well through its ordinary Exits, Wells, Springs, and the Outlets of Rivers, as through the Chasms then newly opened; through the Camini, or Spiracles of *Aetna*, or other neighbouring Volcano's; and those Hiatus's at the Bottom of the Sea, whereby the Abyss below opens into it, and communicates with it. That as the Water resident in the Abyss, is in all Parts of it stored with a considerable Quantity of Heat, and more especially in those where these extraordinary Aggregations of this Fire happen; so likewise is the Water, which is thus forced out of it; inso-much, that when thrown forth, and mixed with the Waters of Wells, or Springs of Rivers, and the Sea, it renders them very sensibly hot.

He adds, that though the Abyss be liable to these

Commutations in all Parts, yet the Effects are no where very remarkable, except in those Countries, which are mountainous, and consequently stony and cavernous underneath; and especially where the Disposition of the Strata is such, that those Caverns open into the Abyss, and so freely admit, and entertain the Fire; which assembling therein, is the Cause of the Shock; it naturally steering that Way, where it finds the readiest Reception, which is towards those Caverns. Besides, that these Parts of the Earth, which abound with Strata of Stone or Marble, making the strongest Opposition to this Effort, are the most furiously shatter'd; and suffer much more by it, than those which consist of Gravel, Sand, and the like lazier Matter, which more easily give Way, and make not so great Resistance; but above all those Countries which yield great Store of Sulphur and Nitre, are by far the most injured and incommoded by *Earthquakes*; those Minerals constituting in the Earth a Kind of natural Gunpowder, which taking Fire upon this Assemblage, and Approach of it, occasions that murmuring Noise, that subterraneous Thunder, which is heard rumbling in the Bowels of the Earth during *Earthquakes*; and by the Assistance of its explosive Power, renders the Shock much greater; so as sometimes to make miserable Havocks and Destruction.

And it is for this Reason, that *Italy, Sicily, Anatolia*, and some Parts of *Greece*, have been so long and so often alarmed and harrassed by *Earthquakes*; those Countries being all mountainous and cavernous, abounding with Stone and Marble, and affording Sulphur and Nitre in great Plenty.

Further, that *Ætna, Vesuvius, Hecla*, and the other Vulcano's, are only so many Spiracles, serving for the Discharge of this subterraneous Fire, when it is thus preternaturally assembled. That where there happens to be such Structure and Conformation of the interior Parts of the Earth, as that the Fire may pass freely, and without Impediment from the Caverns, wherein it assembles into those Spiracles; it then readily and easily gets out, from Time to Time, without shaking or disturbing the Earth: But where such Communication is wanting, or Passage not sufficiently large and open, so that it cannot come at the Spiracles, it heaves up and shakes the Earth, with greater or less Impetuosity, according to the Quantity of Fire thus assembled, till it has made its Way to the Mouth of the Vulcano. That therefore there are scarce any Countries much annoyed with *Earthquakes*, but have one of these fiery Vents, which are constantly in Flames when any *Earthquake* happens; as disgorging that Fire, which while underneath, was the Cause of the Disaster. Lastly, that were it not for those Diverticula, it would rage in the Bowels of the Earth much more furiously, and make greater Havock than it doth.

This Theory of Dr. Woodward seems to me so very ridiculous, that it scarce deserves the Pains one would take in refuting it. It is true, that it has a very devout Foundation, which is that Abyss mention'd by *Moses*, but which none of the most learn'd Moderns have been capable to discover yet, and which is entirely contrary to the Motion of the Earth; since if there was so huge a Heap of Water underneath, it would far exceed in Bulk that of the Earth, though it should be carried along with it, in its Vortex, which is impossible. But that Abyss even supposed, it is false that there is a perpetual Fire between it and the Earth, continually pumping up Water to supply the Earth with Rain, Dew, &c. For to suppose such a Fire, it must be supposed likewise to have been preternaturally lighted from the Creation of the World; and as it is consider'd as answering the Intentions of the Creator, in supplying the Earth with Part of what is absolutely necessary to maintain it in its natural State, viz. with Dew, Rain, Springs, Rivers, &c. it must be supposed, that he appointed a proper Place to that Fire, to keep it continually lighted, as it did to all the other Parts of this vast Universe; and certain Limits, beyond which it could not reach; having enough allowed to range in, in order to discharge its Functions, without causing any Disorders in Nature, without a special Leave from the Creator, for the Punishment of the Creature. But to be convinced of the Falsity of this Hypothesis of

Dr. Woodward, we have only to consider, that the Earth has no Need of this perpetual Pumping of this pretended Fire from the Abyss to be supply'd with Water, since without the Help of so prodigious and incomprehensible a Phænomenon, it can easily borrow all its Humidity from that prodigious Heap of Water the Creator separated from it in the Creation, the Existence whereof our Senses render as certain, as of that of the Earth itself; giving us to understand in creating them both together, that there should be always so natural a Sympathy between them, that it was impossible they could exist without their mutually assisting each other; and that if they were separated, it was only to establish a more regular and beautiful Harmony between both. It was, in all Appearance, to maintain that Harmony, that the Earth was made porous, for the Filtration of the Water through its whole Substance, which accounts very well, without having Recourse to ridiculous Fancies, which are neither supported by our Senses, nor by Reason, for all the aqueous Phænomena, as Dew, Rain, Springs, &c.

To pretend, that that supposed Fire being stopped in any Part of the Earth, and consequently in a greater Quantity than usual in that Part, causes such an extraordinary Rarefaction and Intumescence of the Water of the Abyss, so as to put it into great Commotions and Disorders, which cause, in the Earth, which is imagined expanded on the Face of the Abyss, those Commotions and Agitations we call *Earthquakes*, is to entertain us with ridiculous Romances contrary to Reason and Experience; for if it was ever so true, that the imaginary subterraneous Fire, could have that Effect, and cause an Intumescence of the Water of the Abyss, that Intumescence could be but in that Place, where there is such a preternatural Quantity of Fire; and as that Abyss should be a continued Heap of Water, expanded all over underneath the Earth, without Interruption; the Intumescence could not make any great Effort upon the Earth in that, since its meeting with a greater Compression of the Air, in Proportion as it swells, the contiguous Water would give Way, and thereby make Room for the swelled Water re-assuming its former State; such as we see a Wave of the Sea, becoming smooth, at that very Instant we believe it ready to overflow the Shore. This Foundation of the Theory of Dr. Woodward being destroy'd, his whole Edifice falls to the Ground. For what can be more unreasonable than to pretend, that where his imaginary Fire has most Room to extend itself, as in those Countries which are the most cavernous underneath, it makes greater and more Efforts to break its Prison, whereby *Earthquakes* are more sensible and frequent; since, on the contrary, Fire never acts with greater Violence, than when cloistered, and has less Vent to break forth.

M. Amontons, a Frenchman, in the Memoirs of the Royal Academy of the Sciences, *Ann.* 1703, has an express Discourse to prove, that on the Foot of the new Experiments of the Weight and Spring of the Air, a moderate Degree of Heat may bring the Air into a Condition capable of causing *Earthquakes*. It is shown, that at the Depth of 43528 Fathoms, below the Surface of the Earth, Air is only one fourth less heavy than Mercury. Now this Depth of 43528 Fathoms, is only a 7th Part of the Semi-Diameter of the Earth; and the vast Sphere beyond this Depth, in Diameter 6451538 Fathoms, may probably be only filled with Air, which will be here greatly condensed, and much heavier than the heaviest Body we know in Nature. But it is found by Experiment, that the more Air is compressed, the more does the same Degree of Heat increase its Spring, and the more capable does it render it of a violent Effect: And that for Instance, the Degree of Heat of boiling Water increases the Spring of the Air above what it has in its natural State, in our Climate, by a Quantity equal to a Third of the Weight wherewith it is pressed. Whence we may conclude, that a Degree of Heat, which on the Surface of the Earth will only have a moderate Effect, may be capable of a very violent one below. And as we are assured, that there are in Nature Degrees of Heat, much more considerable than that of boiling Water: It is very possible there may be some whose Violence, further assisted by the exceeding Weight

of the Air, may be more than sufficient to break and overturn this solid Orb of 43528 Fathoms, whose Weight compared to that of the included Air, would be but a Trifle.

This Sentiment of M. Amontons, is in some Part very agreeable to mine; for it may be seen in my Refutation of Dr. Lyfter's Theory, that I consider the Air and the Fire, as the two Causes of *Earthquakes*, though I have not Recourse to support my Sentiment to the tedious Calculations of M. Amontons, which though very ingenious, are not of a great Use. — That Fire which I admit for the primary Cause of *Earthquakes*, is not the imaginary perpetual Fire of Dr. Woodward, but only an occasional one, which has for Foundation and Fuel, the nitrous and sulphurous Particles of the Mass of the Earth, which is every where impregnated with a greater or less Quantity thereof, and is sublimated from it, by the Heat of the Sun, according as that Heat is more or less powerful or excessive. That in those Climates where it is the most powerful, that Sublimation of the sulphurous and nitrous Particles of the Earth being perfected, the same Heat which in colder Regions had exhausted itself in that Sublimation, and proceeded no further, being continually supplied with Abundance of igneous Particles, by the perpendicular Continuity of the Rays of the Sun, which recruits its weaken'd Strength, proceeds to the Assembly of those sublimated Particles, and to their Condensation, whereby are formed those Compounds we call Pyrites; but as it is impossible, that in the Coadunation of these sulphurous and nitrous Parts, some heterogeneous and hard Bodies, should not be incorporated with them, and that Incorporation cannot be made without a violent Friction of the different Particles which enter into it, against one another, that of the sulphurous Particles against the nitrous, and other harder Bodies, heating them to Excess, and that Heat being heighten'd by that of the Sun, they take Fire, which is soon communicated to all the other inflammable Bodies they can be environ'd with. The immediate Effect produced by that Fire thus lighted, is the Rarefaction of the ambient Air (which recovering by that Rarefaction its native Elasticity, till then much embarrassed in the aqueous and terrestrial Particles, which render'd the Springs of it loose and imbecile) which makes the most violent Efforts to gain more Room, or to break thro' its Confinements; but as it finds the Pores through which it had a free Ingress and Regress, closely stopped by the Vapours which the Heat of the Fire has agglutinated and harden'd, impatient of its Confinement, it renews its Efforts, by the Violence whereof it shakes the whole super incumbent Mass; which Shock is more or less violent, and consequently more or less sensible, according as the Volume of the Air rarified, is greater or less, and more or less confined.

As to the Phænomenon of *Earthquakes*, the *Philosophical Transactions* furnish us with Abundance of Histories of them; particularly one at Oxford, in 1665, by Dr. Wallis and Mr. Boyle. Another at the same Place, in 1683, by Mr. Pigot. And another in Sicily, in 1692-3, by M. Heriot, F. Alessandro Burgos, and Vin. Bonajutus; which last is one of the most terrible in all History. — It shook the whole Island; and not only that, but Naples and Malta shared in the Shock. It was of the second Kind, mention'd by Aristotle and Pliny, viz. a perpendicular Pulsation or Succussion. It was impossible, says the noble Bonajutus, for any Body in this Country to keep on their Legs, on the dancing Earth; nay, those that lay on the Ground, were tossed from Side to Side, as on a rolling Billow: High Walls leaped from their Foundations several Paces, &c. — The Mischief it did in Magazines was amazing: Almost all the Buildings in the Countries were thrown down; fifty-four Cities and Towns, besides an incredible Number of Villages, were either destroyed, or greatly damaged. We had only Instance the Fate of Catania, one of the most ancient, and flourishing Cities in the Kingdom; the Residence of several Monarchs, and an University. This once famous, now unhappy Catania, to use the Words of F. Burgos, had the greatest Share in the Tragedy. F. Anthon. Serrovia, being on his Way thither, and at the Distance of a few Miles, observed a black Cloud like Night, hovering over the City, and there arose from the Mouth of Mount Gibello, great Spires of Flame,

which spread all around. The Sea all of a sudden began to roar, and rise in Billows; and there was a Blow as if all the Artillery in the World had been at once discharged. The Birds flew about astonished, the Cattle in the Fields run crying, &c. His and his Companions Horses stopp'd short, trembling; so that they were forced to alight. They were no sooner off, but they were lifted from the Ground, above 20 Palms; when casting his Eyes towards Catania, he with Amazement saw nothing but a thick Cloud of Dust in the Air. This was the Scene of their Calamity; for of the magnificent Catania, there is not the least Foot-steps to be seen. S. Bonajutus assures us, that of 18914 Inhabitants, 18000 perished therein. The same Author, from a Computation of the Inhabitants, before and after the *Earthquake*, in the several Cities and Towns, finds that near 60000 perished out of 254900.

Jamaica is remarkable for *Earthquakes*. The Inhabitants, the famous Dr. Sloan informs us, expect one every Year. That Author gives us the History of one in 1687; another horrible one in 1692, is described by several anonymous Authors. In two Minutes Time it shook down and drown'd nine-tenths of the Town of Port Royal. The Houses sunk out-right, 30 or 40 Fathoms deep. The Earth opening, swallowed up the People; and they rose in other Streets; some in the Middle of the Harbour, and yet were saved; though there were 2000 People lost, and 1000 Acres of Land sunk. All the Houses were thrown down throughout the Island. One Hopkins had his Plantation removed half a Mile from its Place; of all Wells, from one Fathom to six or seven, the Water flew out at the Top with a vehement Motion. While the Houses, on one Side of the Street were swallow'd up, on the other they were thrown on Heaps; and the Sand in the Streets roll'd like Waves in the Sea, lifting up every Body that stood on it, and immediately dropp'd down into Pits; and at the same Instant a Flood of Water breaking in, rolled them over and over; some catching hold of Beams and Rafter, &c. Ships and Sloops in the Harbour were overfet and lost; the Swan Frigate particularly, by the Motion of the Sea, and sinking of the Wharf, was driven over the Tops of many Houses. It was attended with a hollow rumbling Noise like that of Thunder. In less than a Minute, three Quarters of the Houses, and the Ground they stood on, with the Inhabitants, were all sunk quite under Water; and the little Part left behind, was no better than a Heap of Rubbish. The Shock was so violent, that it threw People down on their Knees, or their Faces, as they were running about for Shelter. The Ground heav'd and swell'd like a rolling Sea, and several Houses still standing, were shuffled and moved some Yards out of their Places. A whole Street is said to be twice as broad now as before; and in many Places, the Earth would crack, open and shut, quick and fast. Of which Openings, two or three hundred might be seen at a Time; in some whereof People were swallow'd up; others, the closing Earth caught by the Middle, and pressed to Death; in others the Heads only appear'd. The larger Openings swallowed up Houses; and out of some would issue whole Rivers of Water, spouted up a great Height into the Air, and threatening a Deluge to that Part the *Earthquake* spared. The whole was attended with Stenchies and offensive Smells, the Noise of falling Mountains at a Distance, &c. and the Sky in a Minute's Time was turn'd dull and reddish, like a glowing Oven. Yet as great a Sufferer as Port-Royal was, more Houses were left standing therein, than in the whole Island beside. Scarce a Planting-House, or Sugar-work, was left standing in all Jamaica. A great Part of them were swallowed up, Houses, People, Trees, and all at one Gape. In lieu of which afterwards appeared great Pools of Water, which when dried up, left nothing but Sand, without any Mark that ever Trees or Plants had been thereon. Above 12 Miles from the Sea, the Earth gaped and spouted out, with a prodigious Force, vast Quantities of Water into the Air; yet the greatest Violences were among the Mountains and Rocks; and it is a general Opinion, that the nearer the Mountains, the greater the Shock; and that the Cause thereof lay there. Most of the Rivers were stopped up for 24 Hours, by the falling

of the Mountains, till swelling up, they made themselves new Tracts and Channels, taring up in their Passage Trees, &c. After the great Shake, those People who escaped, got on board Ships in the Harbour, where many continued above two Months, the Shakes all that Time being so violent, and coming so thick, sometimes two or three in an Hour, accompanied with frightful Noises like a rustling Wind, or a hollow rumbling Thunder, with Brimstone Blasts, that they durst not come ashore. The Consequences of the Earthquake was a general Sickness, from the noisom Vapours belched forth, which swept away above 3000 Persons.

After the Detale of these horrible Convulsions, the Reader will have but little Curiosity left, for the less considerable Phænomena of the *Earthquakes* at *Lima* in 1687, described by *F. Alvarez de Toledo*, wherein above 5000 Persons were destroyed; this being of the vibratory Kind, so that the Bells in the Church rung of themselves. Or that at *Batavia* in 1699, by *Witzen*; that in the North of *England* in 1703, by *Mr. Thoresby*; or lastly, those in *New-England* in 1679 and 1670, by *Dr. Matther*.

Note, That Chymistry furnishes us a Method of making artificial *Earthquakes*, which shall have all the great Effects of natural ones: This Operation is performed in the following Manner.

To twenty Pounds of Iron Filings add as many of Sulphur; mix, work, and temper the whole together, with a little Water, so as to form a Mass, half moist and half dry. This being buried three or four

Feet under Ground, in six or seven Hours Time will have a prodigious Effect; the Earth will begin to tremble, crack and smok, and Fire and Flame burst through. Which artificial Phænomenon confirms my Theory of the *Earthquake*. For this cannot happen without the sulphurous Particles excessively heating themselves by their violent Frictions against the Iron Filings, and in Process of Time taking Fire, which Fire rarifying the Air intercepted between it and the Earth, forces it to extend itself, and in that Dilatation shakes, cracks, &c. the same incumbent Earth.

Some are of Opinion, that *Earthquakes* would be more frequent, and make more dreadful Havocks, was it not for *Volcano's* or ignivomous Mountains, which serve as Spiracles or Vents to the subterraneous Vapours and Fires; which is likewise my Sentiment, for as the Air extremely rarified by the subterraneous Fires cannot be long confined, without making continual, and the most violent Efforts, to set itself more at large; it breaks its Prison, and forces all the Obstacles it can meet with, whereby it facilitates likewise the Passage of the Fire, till they both arrive at some Mountains, most commonly full underneath of Vacuities or Caves, where finding themselves more at large, the one rages with a still greater Violence than before, whereby the other being still more rarified, and consequently acquiring a greater Strength, lacerates, and breaks the Bowels of those Mountains, till it makes a Vent for itself and the Fire, whereby they are both entirely set at Liberty.

METHODISM.

METHODISTS, are the Followers or Disciples of two Priests of the Church of *England*, *John Wesley* and *George Whitefield*, who in our Days have made a Society a-part from that Church, under a Pretence of a more strict Reformation; or of adhering more scrupulously to those of the 39 Articles of her Belief, relating to *Absolute Predestination*, *Justification by Faith alone*, &c.

Note, That as *Methodism* is of a new Date, I hope this concise and impartial Account of the Beginning and Progress thereof, will please the Reader; especially when it does not come from a *Methodist*.

A *Methodist*, (according to the Definition the Reverend Mr. *John Wesley* gives of him) is one who loves the Lord his God, with all his Heart, and with all his Soul, and with all his Mind, and with all his Strength, i. e. that a *Methodist*, according to this last Definition, should be a true Disciple of Christ; and in that Sense all true Christians should be *Methodists*, or are obliged to be *Methodists*; since Mr. *Wesley's* Definition is nothing less than that great Command of Christ to his Disciples, in which, says he, consists all the Law and the Prophets; if Mr. *Wesley* adds to it, and loves his Neighbour as himself.

This new Reformation seems not to have been premeditated at first; for, as far as I can judge by the Circumstances, it is only the Effect of a pure Hazard; which the new Reformed have much more Reason to consider as a Miracle of the Grace of God, than had the Disciples of *Luther* or *Calvin*; and have besides, this farther Advantage over them, that theirs is not founded on Sedition, Rebellion, Tumult, War, Slaughter, and Blood. To prove this Assertion, without pretending to be a *Methodist* myself; and in order that my Readers may judge, without Partiality or Prejudice, if I accuse just; I think myself obliged to give here a concise Relation of the Beginning and Progress of *Methodism*.

The Name of *Methodists* was given, if I have been rightly informed, to Mr. *George Whitefield*, and Mr. *John Wesley*, and some others, from whom their Disciples have borrowed it, by their School-fellows at *Oxford*, while they studied Theology in that University, as a Name of Contempt, which, the Regularity of their Conduct, the Innocency of their Manners, and their Pity, Virtues rarely to be found in Colleges, and among

young Students, and which was a tacit Condemnation of the licentious Life of those who first called them *Methodists*, merited them.

Conscious that the Ministry of the Word to which they designed to devote themselves, consisted rather in godly Edifying, than in endless Genealogies; that the necessary Qualifications of a Minister of Christ, besides Learning, were Charity, a pure Heart, a good Conscience, and Faith unfeigned: That he should be neither self-willed, nor soon angry, nor given to Wine, nor to filthy Lucre; but a Lover of Hospitality, a Lover of good Men, sober, just, holy and temperate; holding fast the faithful Word, as he had been taught, that he may be able by sound Doctrine, both to exhort and to convince the Gainsayers; which are the Instructions given by St. Paul to his beloved Disciple *Timothy* and to *Titus*; that to enter the Sanctuary in the Quality of a Minister of the living God, with a Heart full of Supineness and Ambition, &c. is to turn the Back to the Altar, and adore the Rising-Sun; they exercised themselves in the Practice of all those Perfections and Virtues, assisted therein by supernatural Succours; in order to acquire in Time a perfect Habit thereof; in which they succeeded so well, that they became soon the Jest of those who would know nothing of the blessed Folly of the Cross of Christ; and had conceived so great an Abhorrence for Vice, that they could not so much as suffer any Thing which could have the least Appearance of it; even disguised under the most ambiguous Terms, in the most polite Conversation, and in the Company of those esteemed as honest, in the common Opinion of the World; for they had agreed among themselves to make use of certain particular Signs, unknown to any Body else, whereby they gave Notice to one another to withdraw, when any Thing was said offensive to Christian Ears.

All this while their religious Practices had made no further Progress, than among the few Friends they had selected to themselves; but the divine Providence, always ready to advance the Glory of the Kingdom of Christ, and to establish it on the Ruins of Immorality and Irreligion, procured them soon the Occasion to communicate to others a Portion of that holy Spirit themselves had received, and shew them that Light which till then had been hid under the Bushel: For the Government of *England* having formed the Resolution

to send Colonies to that Part of *Florida*, which is at present called *Georgia*, from the Name of his present *Britannick* Majesty; Mr. *George Whitefield*, Mr. *John Wesley*, &c. offered to accompany their Countrymen thither, actuated to it by no other Motive than the Glory of God, and the Propagation of the Gospel, under another Hemisphere, and in a Climate where the dark Clouds of *Paganism* and Idolatry, had not been yet penetrated by the divine Light of Truth; forsaking for that Purpose their native Country, and all that was capable to render it dear to them. But feeling within themselves a Kind of holy Reluctancy against quitting it, before they had communicated to it, in Gratitude for its having given them Birth and Education, part of the divine Light where-with the *Sun of Justice* had enlighten'd their Understanding; and the Zeal for the Edification of the Lord's House, they were inflamed with, being divided, between the laudable Desire of contributing all in their Power to the Edification of their Countrymen, and that of the Conversion of the Infidels; they were permitted to take Leave of them in several of the Parish-Churches of *London*, and of its Suburbs, in an Apostolical Manner, by what these new Missionaries themselves call'd a *Farewel Sermon*.

Their Zeal, Eloquence, and the sacred Unction of their Discourses, accompanied with God's Grace, had soon so surprizing an Effect, that the most spacious Churches could not contain the People who crowded to hear them; and who, till then, used to hear the Gospel preached by too many, in the same Manner one would read any indifferent Book, to pass away some tedious Hours, admired these young Ecclesiasticks, who, without the Assistance of a Book, and imitating the Apostles, trusted entirely to their Memory, assisted by the Dictates of the Holy Ghost, and spoke, as it were, from the Plenitude of their Heart.

But if this new Manner of Preaching the Gospel pleas'd their Auditors, it soon alarm'd those, who falsely imagine, that they are introduced into the Sanctuary, for no other End than to receive what is offer'd to the Altar of the living God, and apply it to their own Use; and Jealousy coming to the Succours of Indolence and Lukewarmness, they were refused to appear any more in those same Places, where they had began to restore the Kingdom of Christ, on the Ruins of *Atheism*, *Socinianism*, *Profaneness*, *Irreligion*, and *Immorality*, with which this Age abounds. The Regularity of *Samuel's* Conduct, was a tacit Condemnation of the criminal one of the Sons of *Eli*, and the strict Holiness of his Life, threaten'd a Reformation in the Sanctuary, which was entirely contrary to their Inclinations.

What will our new Missionaries do in this Dilemma? Must they bury their Talent under Ground? Must they keep silent, while the World is suffer'd to speak, and teach its pernicious Maxims? Can *St. Paul* be over-aw'd by the Areopage of *Athens*? No; conscious that Christ preach'd, though he was not suffer'd to do it in the Temple of *Jerusalem*; that the Apostles when first sent to teach all Nations, had no particular Places of Worship; that they preached wherever they found any favourable Opportunity to do it, in the Fields, on Mountains, or in any other Places, which could contain the Multitude who followed them; they thought that the Example of those Founders of the Christian Religion, could authorize them to do the same; and expected that those who had heard them with so much Satisfaction in the Churches, which Jealousy had shut against them, would make no Exception against the Place, when they could find in the open Fields, the same Persons who had fed them in the Churches; in which they were not disappointed; for I could venture to say, that the Success exceeded their Expectation; and the marvellous Progresses they have made since, throughout the whole Kingdom of *Great Britain*, and in foreign Parts, either by themselves, or their Disciples, confirm'd me in the Opinion I had conceiv'd at first, that the strong Opposition they met with, contributed much to those Progresses; as well as the Regularity of their Conduct, and the Innocency of their Life, which is entirely agreeable to the Morals they preach, notwithstanding what Calumny can say to the contrary.

What I admire most in the Societies they have esta-

blished, is, that sincere Friendship, Unanimity, and unalterable Charity, which consists in the Love of God above all Things, and in that of our Neighbours, on which the Christian Religion is founded, and which calls to my Mind those fortunate Days of the primitive Church, when all Christians were but one Heart and one Soul. Oh could the different Sects which have lacerated Christ's seamless Gown, be persuaded to frequent sometimes those Societies, whence Medifance, Calumny, and all the other Vices contrary to a Christian Charity, are entirely banished, to learn from them the Practice of that excellent Virtue, without which we are but *Æs sonans*, & *Cymbalum tinniens*, we should soon see a thorough Reformation among us all; for few Christians, those excepted, have a true Notion of Charity, or at least neglect the Practice thereof as insignificant, even those who have among them all the other Marks of the true Church of Christ, want this, which is the most essential: For many I fear approach the Altar of the God of Mercy and Forgiveness, with a Heart full of Malice and Ill-will towards their Neighbour, and yet affect a great Outside-Shew of Religion and Piety; for of what Service, for Example, can it be to a *Roman Catholick*, to hear three Masses every Day; or to a *Protestant* to be assiduous at his Church, if while he prays God to forgive him, he is fully determined to forgive no Body; and when he promises to do it, is it not trifling with Heaven? Such a Conduct is not only prejudicial to their eternal Salvation, but is likewise very dangerous in a civil Society, for those *white-wash'd Walls* make use of their Hypocrisy to ravish the Reputation and Credit of their Neighbours with more Authority. Among the *Methodists* they are as jealous of the Reputation of others, as of their own; and put Calumny on a Level with Murder; since in fact there is no Difference before God, between robbing a Man of his Reputation, and depriving him of his Life.

What displeases most the Church of *England*, in the *Methodists* is, their attempting to reform that Church; without considering, that the *Methodists* have the same Right to reform the Church of *England*, that Church had to reform the *Roman Church*: Their Mission being the same, neither Party pretending to an immediate one, which is always confirm'd by Miracles; as was that of the Apostles, *Mark xvi. 20. And they went forth and preached every where, the Lord working with them, and confirming the Word with Signs following.*

Besides, if they really aim at a Reformation of the Church of *England*, I don't see that that Reformation extends further than the Discipline of the Church, and that only by awakening the languishing Zeal of some of her Ministers; and not be like those indolent and lazy Workmen, complain'd of in the Gospel, who expected their Salary, though they had not Work to deserve it; for their Belief in Matter of Faith is the same; they admitting *Absolute Predestination*, *Justification by Faith alone*, &c. agreeable to *Art. 11*, and *17*, of their Church. In which I must confess I differ widely from them; for those Dogma's seem to me entirely contrary to God's infinite Mercy, who himself expresses an earnest Desire, that all Men should be saved; Christ his Son being dead for the Redemption of all Men; and to the Doctrine of the primitive Church, and of all the ancient Fathers, confirm'd by the oecumenical Councils; though in the Manner Mr. *George Whitefield* explains that *Justification*, in his Answer to the Bishop of *London's* Pastoral-Letter, he does not seem to deviate much from the Catholick Truth. Neither am I of Opinion, that all the Works done without Faith, have the Nature of Sin; since it is thereby asserting, that there is no Action morally good; that all the Virtues of the *Pagan* Heroes and Philosophers were Vices; and that an Infidel, who practises Generosity, Mercy, Compassion, &c. commits so many Sins; which would be destroying entirely the good Order of a civil Society: But if I differ from them in Belief; I admire their Christian Conduct, which is a Texture of all the Virtues recommended in the Gospel, between which, and that of the primitive Christians, there is no Difference.

These new Societies are the more intitled to the Protection of a Government, that they do not meddle with Politicks, nor lard their Discourses with political Reflections,

fections, to sow the Seeds of Disaffection in the Hearts of the Subjects, and excite them to Sedition; for though they acknowledge *Jesus Christ* for their King, and endeavour to establish his Kingdom among us, they know at the same Time, that that King who is eternal and in Heaven, commands us to obey and respect the temporal Princes, whom he has appointed his Vicegerents upon Earth, and that his Kingdom being not of this

World, is to be established only in our Heart, by his Grace, and the Predication of the Gospel, not by Riots, Tumults, Confusion, Fire and Sword, as all the other Reformers have done.

Note, That Mr. John Wesley does not hold with Mr. Whitefield in Regard to the Doctrine of Absolute Predestination.

M I D W I F R Y.

M I D W I F R Y, is the Art of helping or assisting a Woman in Labour, so as to facilitate her Delivery, without any Danger to the Woman or to her Fruit.

I say, of *helping or assisting a Woman*, to give to understand, that they should not put too soon a Woman in Labour, or force Nature to unload itself of its Burthen, contrary to its Intention; for as it must be the chief Agent in those Cases, it wants nothing else then but a gentle and compassionate Hand, to ease it of Part of its Fatigues, and render them less tedious and painful; otherwise all the Efforts a Midwife makes, through Want of Experience and Skill, being opposed by Nature, which is not to be forced in its Operations, expose both the Woman and her Child to very great Dangers; and a Midwife, or a pretended one who acts otherwise, and wants the Qualifications requisite to her Profession, is answerable for all the Accidents which happen, and if the Woman or her Child die in her Hands, is guilty before God, of wilful Murder. To avoid these Inconveniencies, no Midwife should be suffered to practise, before she has been examined by a Body of Physicians and Surgeons, and licensed by them; which would save the Lives of several Thousands of unfortunate Women, who fall a Victim to the Ignorance of their Midwives; who have but too often no other Qualifications, but a great deal of Impudence, for which they should be severely punished.

It is to prevent the great Dangers Women are exposed to in their Labour, that I'll give here an entire Treatise of *Midwifry*, where Midwives, who are really such (though there be but very few in *England*) will find several curious Observations absolutely necessary to render them perfect in their Profession; and where those who are ignorant will learn it. But to proceed with the same Order on this important Subject, as I have done on all others, I must begin by *Pregnancy*, the *different Sorts thereof*, and the *Signs of a true, or false Pregnancy*, &c. for all that could be previous to it has been explained in my Treatise of *Anatomy*.

PREGNANCY, properly taken, is a Tumour of the Belly, caused by the Infant situated in the Matrice or Womb.

There are two Sorts of *Pregnancies*, one *true or natural*, and the other *false or preternatural*.

The *natural PREGNANCY or Conception*, is, when a live Child is in the Womb.

A *false PREGNANCY*, is when nothing but foreign Bodies are formed in the Matrice, as Winds mixed with some Waters, called *Hydropsy of the Matrice*, or false Conceptions, Moles, or some Membranes full of Blood and corrupted Seed.

The Symptoms of a *Pregnancy* are, when in a few Days after the conjugal Act, a small Pain is perceived about the Navel, attended with some gentle Commotions in the Bottom of the Abdomen, the Suppression of the Menfes, or their flowing in less Quantity than usual, vomiting, loathing, longing, &c. the Breasts beginning to swell, grow hard and painful, and contain a little Milk. The Nipples also becoming larger, firmer, and darker coloured, a livid Circle appearing round them, the Eyes seeming sunk and hollow: But the most certain Sign is, if by introducing the Finger in the *Vagina*, the inward Office of the Matrice is found exactly shut, without any Hardness, and in a good Situation, as likewise a considerable Distension of the Body of the Matrice. The Woman being more or less

big, and the Motions of the Embryo, are also two undubitable Proofs of *Pregnancy*.

Note, That the Motions felt in the Matrice, are not always an undubitable Proof of a natural, or true Pregnancy; because the Child has of himself a Motion of Totality, and of Partiality; of Totality when he moves his whole Body; and of Partiality, when he only moves Part thereof at once, as the Head, an Arm, a Leg, the rest of his Body remaining firm. Which two Motions make the Difference between a true and a false Conception; for a false Conception has the Motion of Totality, but not that of Partiality; a Woman, for Example, who has a large Mole in her Womb, the Mole falls always like a Lump of Clay, on that Side she turns herself, which does not happen in a true Conception.

The Embryo is perceived to move about the fourth Month, sometimes sooner, sometimes later, according to its Strength; for some Women feel him as soon as the second Month, or even sooner; and others about the third Month only, or later. At the Beginning his Motions are very small, and not unlike those of a Bird newly hatched; after which they become greater in Proportion as the Child grows stronger and bigger, and grow at last so violent, that they force the Matrice to unload itself of its Burthen.

Note, That Women who use daily of Coition, are often deceived, imagining themselves with Child when they are not; though their Menfes cease to flow, and they are troubled with Nausea's, Vomiting, &c. for a false Conception is attended with almost the same Symptoms of a true one.

Women who have a *false Conception*, have their Belly equally distended on all Sides; and those big of a *true Conception* have theirs prominent in the Middle, and the Navel much more raised: Therefore in the Doubt of a *Pregnancy* of four or five Months or more, if the Navel of the Woman is found sunk, and the Orifice of her Womb small and hard, it is almost an infallible Sign that she is not big of a natural Conception; which is often caused, either by a great Quantity of Wind which swells and distends the Matrice in that Manner, or Water gathered in it in such a Quantity, that some Women have voided a Pail full of it without a Child, though all the while they imagined themselves with Child.

There are some Women who generate nothing but *false Conceptions* and *Moles*, which is discovered by the Signs abovementioned; and by the *Mole* remaining in the Matrice, after the full Term of Gestation is expired, which notwithstanding is very rare.

*Note, That a Mole is a misshapen Mass of hard Flesh, or the Chaos of an Embryo, and would have grown to an Infant had not the Process of Conception been disturbed: Though it be without regular Bones, Viscera, &c. yet the Lineaments frequently are not so far effaced, but that there are some Remains of a Child; sometimes a Hand, and sometimes a Foot have been spied; but commonly the Secondines. It is rare that more than one Mole is excluded; though *Servetus* observes, there are Instances of two, three, or even more. He adds, that though they usually come alone, yet they have been known to come with a Fetus.*

Fœtus, sometimes before it, and sometimes after it. The Mole is distinguished from an Embryo, in that it has a Placenta whereby to receive its Nourishment from the Mother. Instead of that, it grows immediately to the Womb, and is nourished thence. It has a Kind of vegetative Life, and continues growing in Bulk till the Time of Exclusion: Sometimes it has been borne in the Womb for two or three Years.

This Production is supposed to arise from some Defect or Indisposition of the Ovum or Egg, or perhaps from the Male's Seed wanting Force to penetrate it sufficiently in order to open, or expand the Parts: Or the Effect may be accounted for, by supposing an Ovum to drop into the Womb, without being impregnated by the Male: In all which Cases, the Egg continuing to grow, and yet wanting something necessary to organize and form it into an Embryo, becomes a shapeless Lump.

Authors are divided, whether or no Women ever bring forth *Moles* without any Intercourse with Men? Some say, there are *Moles* which derive their Origin from the menstruous Blood detained, coagulated, and hardened, through which the Blood and Spirits have made themselves Passages, &c.

In a *true Pregnancy* the Child must remain in the Matrice, till the Time appointed by Nature for his Exclusion; but a *false Pregnancy* indicates to us to procure, as soon as possible, the Expulsion of what it contains. Therefore in the Occasions where the Signs render Things dubious, one must not use too much Precipitation to form a decisive Prognostick of it. For even those who pretend the best Knowledge and Experience in those Affairs are often deceived: For we have an Infinity of Examples of Women, who by certain Signs which they thought infallible, imagined themselves pregnant, though they were not. I knew a Lady of the first Quality in *Britanny*, and very near related to me, who thought herself with Child at different Times, because she had then some Signs of *Pregnancy*, and had made all the necessary Preparations for her long expected and wished for Delivery, but notwithstanding died in the Expectation, though she liv'd with her Husband for above forty Years: Though she had the Opinion of very able Physicians and Midwives to countenance her in her imaginary Gestation. If they did it by being mistaken themselves in their Prognostick, or because it brought Grist to their Mill, is what I will not pretend to determine; all I know for certain, is, that she had always some of them attending her.

These false *Pregnancies* happen commonly to Women who are not regular as they should be, in the Evacuation of their Menfes, either for Quantity or Quality, and for the Time they must flow; but particularly from 35 to 40 Years of Age; because that Evacuation begins at that Age, not to be so regular as before: Therefore in those Suspensions of *Pregnancy*, one must above all Things inform himself of the Manner Women used to have their Menfes, as well as of all other Dispositions which preceded and accompanied the Swelling of the Belly, but particularly of the Disposition of the Navel, and of the internal Orifice of the Matrice.

It happens sometimes that those false *Pregnancies* are as good as a Cause; for after they are terminated, there happens a Change of the Disposition of the Matrice, which is the Cause that in Process of Time Women conceive a real Fœtus, provided there be no other Impediment.

If Physicians, Surgeons, and Midwives, want a great deal of Experience to know for certain, if a Woman be pregnant or not, and of a true or false Conception; they want no less to judge how long she has been pregnant, that they may be sure if she be quick or not: For if a Woman miscarry for having received some very violent Blow, if her Child was alive then, the Person who has struck her deserves Death; if not, he is only punished by a pecuniary Fine. Midwives must also take Care not to be themselves the Cause of the Death of the Child, by putting the Mother in Labour before her Time, as do those who are entirely ignorant of their Art, who falsely imagine that when the Woman with Child complains of violent Pains in her

Belly and Loins, it is always her Labour; which is the Reason why, instead of endeavouring to appease those Pains, they on the contrary endeavour to make them grow stronger, and thus deliver her very unfortunately before Term.

Note, That the famous M. *Mauriceau*, a French Man-Midwife, knew a Woman, who being six Months gone with Child, or thereabout, was surpris'd with violent Pains in her Belly, much like those of a Labour, which obliged her to send for her Midwife, who knowing but very little of her Art, used all Sorts of Means to deliver her, by encreasing her Pains, making her walk in the Room, &c. as if she had gone her full Time. But the Woman seeing that, notwithstanding her continual Pains which lasted two Days, there was no Appearance of Delivery, she sent for him, M. *Mauriceau*, who having found her in that unhappy Condition, felt the internal Orifice of the Matrice, found it dilated so as to admit the Extremity of the little Finger into its internal Part, and still more dilated towards the external: But perceiving that she had no other Accident but those Pains, he ordered her immediately to Bed, where she remained eight or nine Days; during which, all her Pains ceased, and her Matrice closed as exactly as it was before those Pains, and she went on three Months longer in *Pregnancy*, i. e. her full Time, when she was delivered of a very strong Girl, who lived.—M. *Mauriceau* observes, that if he had continued as the Midwife had began, the Woman had, indubitably, been delivered at six Months, which had caused the Death of the Child, either in her Womb, or soon after her Abortion: And advises Midwives to behave on such Occasions, as he did then, unless those Pains be attended with Accidents which would put the Mother in Danger of her Life, if she was not quickly delivered; as frequent Convulsions, or some considerable Flooding. As it happened to the Wife of a Pin-maker in *Jewin-street*, 1735, who being between five or six Months gone with Child, and taken all on a sudden with violent Pains in her Belly and Loins, attended with so violent a Flooding, that she had lost above six Quarts of Blood before she sent for me, I found that nothing could save her Life but her Delivery, which was effected a few Minutes after my Arrival; whereby I saved the Woman's Life, who has been pregnant since, and also delivered of several live Children: Though I was very ill a-bed, and knew that the Woman was not in a Condition to pay me, I went to her Assistance, and even paid the Apothecary for the Remedies I prescribed to her; contrary to the scandalous and most inhuman Practice of several of our Physicians that practise Midwifery, who either refuse to succour Women, whose Circumstances render them incapable to gratify their Avarice; or put a whole Neighbourhood under Contribution, by these mercenary and infamous Words, *Who'll pay me?* before they can be persuaded to do their Office; as if the Life of a poor Woman was not as precious before God, and as dear to the Commonwealth, as that of a rich one.

To be very sure of the different Times of a *Pregnancy*, one may make use of the Testimony of the Woman herself, though it is not always infallible; for she may be deceived, reckoning often either from the Time of the Retention of her Menfes, or from that she first feels the Motions of the *Embryo*, which is not always a certain Rule, no more than the Bigness of the Belly, for there are Women who are bigger at half-term, than others when they are ready to lye in; for that depends on Bigness of the Children, or of their Numbers, and likewise of the Quantity of Water contained along with them in the Matrice: But the just, and more certain Judgment that can be formed of it, proceeds from the inward Orifice of the Matrice, which the nearer her Term a Woman is, grows thinner, shorter, and more flattened.

Thus it is very easy to gratify the Curiosity of a Woman who desires to know if she be with Child or not; but it is absolutely impossible to discover if it be with a Boy or a Girl; though those who pretend to know

it, and found that Knowledge on the 42d Aphorism of the 5th Book of *Hippocrates*, where it is said, *that a Woman big with a Male Child has a fresh Colour; and one big with a Female, is pale.* And in the 48th Aphorism of the same Book, mention is made of a Boy being often situated in the right Side, and a Girl in the left. Some pretend to know it by the Woman with Child of a Boy being more pleasant, lively, healthy, and has a better Stomach than when with a Girl; others by Urine; but they are all mistaken in their Conjectures, for we are convinced by daily Experience, that Women with all those Signs are deliver'd of a Girl. *M. Mauriceau* is notwithstanding of Opinion, that a Woman who has had several Children of different Sexes, can guess of what Sex is the Child she is big with, by comparing the Dispositions she finds herself in, with those of her preceding Pregnancies; though I would not trust to that Comparison, since the Constitution of a Woman being much alter'd, and even impaired by several Gestations, her Dispositions must be different almost every Time she is with Child, let her be ever so strong and healthy.

Though it be impossible to know precisely if a Woman be with Child of a Boy or Girl; it is very easy to discover, especially when the Children have a manifest Motion, if she be big with several Children, for then there is an Eminence on each Side of her Belly, where she feels several and different Motions, which Motions are more frequent than common; because Children being pressed, are troublesome to one another, and excite themselves mutually to Motion, though they be separated by Membranes, and swim in different Waters. Besides which it has been observed, that Women, big with several Children, are much more indisposed during the whole Time of their Gestation, and have their Belly more extended round-wise, and not so prominent before as those who have but one Child; and towards their latter Months have always their Legs and Thighs very much swelled, and even sometimes the Labia of the Vulva, and all the Pubis.

From this I'll pass to the *SUPERFETATION*, which is an after or second Conception; happening when the Mother already pregnant, conceives of a later Coition; so that at once she bears two Fœtus's of an unequal Age and Bulk, and is deliver'd of them at different Times.

There is a great Dispute among Authors, to know if a Woman deliver'd of two Children at one Birth, or of a greater Number, has conceived them all of the same Coition, or of several. *Seneca* is of Opinion, that the Manner how the *Superfetation* is accomplished, is as unconceivable as the Ebbing and Flowing of the Sea. Some suppose two or more Children to be the Fruit of a single Coition; and others imagine it to be done by *Superfetation*; but there are Signs to discover the Difference, whereby one may know if two Children have been conceived at once of the same Coition, or successively one after another.

What makes some believe that *Superfetation* cannot happen is, that as soon as a Woman has conceived, her Matrice contracts itself, and closes very exactly; after which the Seed of the Man, which is indispensably necessary for the Conception, finding neither Room nor Entrance into it, cannot, as they imagine, be received into it to produce that second Conception. Add to this, that the Woman discharges her Seed, which is as requisite as that of the Man, through a Vessel which terminates at the Extremity of the inward Orifice, which by that Means falls in the Vagina, and not in the Matrice, as it would be necessary for a *Superfetation*.

Those of a contrary Sentiment answer to these Objections which are very strong, that it is very true, that the Matrice is most commonly exactly closed and contracted, when the Woman has conceived, she then discharging her Seed through another Vessel; but that general Rule has some Exceptions, and that the Matrice thus closed, opens sometimes to evacuate some serous and slimy Excrements, which by their sojourning in it, would offend it; or particularly when the Woman is enflamed with an excessive Desire of Coition, and that in the Heat of the amorous Embraces, she discharges sometimes through the Vessel which terminates at the Bottom of the Matrice, which is dilated and open'd a-new by the impetuous Effort of her Seed agitated and over-

heated: And that Orifice thus opening a little at that Time, if the Seed of the Man be darted at that Instant, they believe a Woman can conceive a second Time, which is called *Superfetation*.

Note, That this last Sentiment is confirmed by the History related by *Pliny*, lib. 7. *Natur. Histor. c. 11.* of a Maid Servant, who having been engaged in amorous Embraces twice in the same Day with two different Persons, was deliver'd afterwards of two Children, one resembling her Master, and the other his Steward; and of another Woman, who was likewise delivered of two Children, one like her Husband, and the other like her Gallant.

This second Conception is certainly a Thing as rare as the Decision thereof is uncertain; therefore we are not to imagine, that every Time a Woman is delivered of several Children at a Birth, there is a *Superfetation*, for they are almost always the Product of a single Coition, through the Abundance of two Seeds, which are sometimes divided in the Matrice, because the Ejaculation thereof is made by Intervals.

We must not believe that a *Superfetation* can happen in all the Times of a Pregnancy, for if it happens, she can be made neither in the first, nor in the second Day of the Conception; because if other Seed was received so soon in the Matrice, there would happen a Mixture thereof, and a Confusion with the first, which then is not yet covered with that Pellicle, which could make a Separation of both, the Embrio being not entirely formed before the sixth or seventh Day: Besides, that the Matrice opening anew, there would ensue an entire Evacuation of the first Seed, not yet enveloped with that first thin Membrane which could preserve it. Which is the Reason why the History of the Servant-Maid, related by *Pliny*, appears incredible. For though she had been known twice in a Day by two different Persons, she could not have conceived two Children, since the Seed of the last Gallant had infallibly spoiled the Work of the first, by a Confusion of Seeds.

Others are of Opinion, that if there be such a Thing as a *Superfetation*, it must happen from the sixth Day of the Conception, or thereabout, to the thirtieth at farthest, because then the Seeds are cover'd with Membranes, and the Fœtus contain'd in the Matrice is yet very little; but that after that Time, a *Superfetation* is impossible, or at least very difficult, because the Matrice filling up more and more by the Growth of the Embrio, if it could receive the Seed, could not retain it.

And others, who consider the *Superfetation* as a Thing almost impossible, alledge for Reason, that the Matrice embraces always so close the Things it contains, that it leaves no empty Place in its Capacity, was it even filled with a foreign Body.

We know, according to *Hippocrates*, that two Children are Twins, *i. e.* have been both conceived of the same Coition, or one after the other by *Superfetation*, because if they are Twins, they be both brought forth into the World, in the same Day, *Que gemellos gestat, eadem die parit, velut concipit.* This is not always true, though Twins are known, by that they are both very near of an equal Bigness, and have most commonly but one Placenta, or After-Birth, which is common to both, being only separated one from the other by their Membranes, which envelope each of them in particular with their Waters; for they are not both in one same Membrane, and in the same Waters, as some have falsely imagined.

But if there be several Children, and there has been a *Superfetation*, they will be likewise separated by their Membranes, but have besides each his own particular Placenta, every one of them of a different Bigness, that made by *Superfetation*, much lesser and weaker, than the other who was conceived first. It happens also sometimes, that Twins are not of an equal Bigness, which happens according as one has more Strength than the other, to draw to himself a greater Abundance of their common Food.

Note, That *M. Mauriceau* tells us, that he deliver'd a Woman once, who was gone her full Time, first of a very large Girl alive, which he drew by the Feet

Feet, having presented herself in that bad Posture; and afterwards brought with the After-Birth another Child, who was a Boy, twice lesser than the Girl, and did not appear by his Bigness, to be more than four or five Months; though they had been both conceived together of a single, and the same Coition, which was discover'd by both having one and the same Placenta. He adds further, the last Child, which was a Boy, was so little, that he drew it all at once, together with the Placenta, and enveloped yet in his Membranes, which he open'd immediately, to see if the Child was alive, but found, by his being already corrupted, that he had been dead a long Time. This last Circumstance of M. Mauriceau's Relation, seems contrary to Experience; for a Child so long dead in the Matrice so as to be corrupted, should have caused very dangerous Symptoms to the Mother, as well as to the other Child, and very likely the Death of one of them (*viz.* of the Child, by infecting the Womb with putrid Exhalations, wherewith she had been violently affected, if not entirely suffocated) if not of both; for the least Disorder of the Matrice, has always a very great Effect on the Woman; therefore it cannot be imagin'd, that so strong a Child as represented by M. Mauriceau, could have been extracted from so distemper'd a Matrice; nor that the Mother could have carried long that dead Fœtus, without being attacked with frequent and violent Convulsions, &c.

Note also, That having discover'd all the different Signs of a Pregnancy, we must next instruct the pregnant Woman, in what Manner she is to govern herself during the whole Course of Gestation, when accompanied with no considerable Accidents, and how to avoid those she is exposed to.

I'll not amuse myself to prescribe here an exact Regimen to a Woman with Child, from the Time of her Conception, to that of her Delivery; for as that Regimen is to be agreeable to her Constitution, and to the Dispositions she finds herself in, during that Time, which are almost always as different as there are different Women with Child, the Climate, the Seasons, altering or changing often those Dispositions, I refer them to the Advices of a judicious Physician, or experienced Man-Midwife; and I'll confine myself in this Place (which otherwise would make a Volume of itself) to caution them against the most dangerous Accidents they are exposed to; beginning by a concise and general Regimen.

That Regimen consists principally in refraining as much as possible, the depraved Appetite they are troubled with during the Time of Gestation; which they may do by avoiding with Care, all they are conscious could occasion or indulge those depraved Appetites, vulgarly called Longings; and consulting, in those Occasions, their Reason, the Health and Preservation of their Fruit, rather than their depraved Imagination, or their Sensuality; for I am really of Opinion, that all those Longings, Women of an inferior Rank are more subject to, than those of a superior one, and who are more in a Condition to gratify those Longings, proceed rather from an Excess of Sensuality, than from a natural and absolutely necessary Cause; and that the too great Indulgence of a Husband, which proves often very oppressive to himself, and the rest of his Family, deprived of Necessaries, to gratify the sensual Appetite of a longing Wife, is often the Occasion thereof; of which I have seen several Instances, particularly here in England, where some Women long for every Thing they see, without the least Regard to the Circumstances of their Husband. I would not have a Husband refuse his Wife, in those critical Times, all that she can ask for in Reason, and what he can afford without prejudicing the rest of his Family; neither would I have him infatuated with the ridiculous Notion, that all he cannot very well afford, and his Wife longs for, endanger her Life, or that of her Child; for all those ridiculous Longings, if they make any Impression on the Embryo, it cannot be but at the Beginning of its Formation; for two or three Months afterwards, that he acquires every Day new Strength; they can affect him no otherwise than by the Mother, if

frustrated of what she longs for, fretting, or putting herself in a Passion, which causes some Disorders in the Preparation of the chylous Substance, the Fœtus is fed with.

It would be very proper, that a Woman should abstain from Coition, for several Days after she has conceived, for the great Emotions, during the amorous Embraces, can be a great Obstacle to the Formation of the Fœtus; according to this Advice of Hippocrates, *lib. de sterilibus, Si mulier, says he, se concepisse cognoverit, primo tempore non amplius ad virum accedat, sed quiescat.*

A Woman with Child, must also avoid if possible all Sorts of violent Exercises, particularly Dancing, Jumping, Riding, &c. because those violent Exercises, cause often an Abortion, by relaxing the Ligaments of the Matrice. Though I am not of the Sentiment of those, who falsely imagine, that an indolent and sedentary Life, during the whole Time of Gestation, renders the Delivery less laborious; since Experience has convinced me of the contrary; and that a moderate Exercise, contributes more to a safe and quick Delivery, than all the Means Art can supply us with, notwithstanding what is said, that Exercise forces Nature to unburthen itself sooner than it would do, to the great Danger of the Mother and of her Child; for if Nature has appointed the Middle of the Body for the Gestation of the Child, and if it has made it float in Water, during the whole Time he remains in the Womb; it is through a Consciousness that being placed in that Part, and floating in Water, which give Way to any violent Impulse, he is not so much subject to the Accidents, which an active Life (so natural to us, that without Action we become a Chaos of Diseases or Infirmities) would expose him to, was he placed higher. A moderate Exercise, besides, renders the Preparation and Coction of the Aliments the Fœtus is fed with in the Womb, more laudable, and free from that great Quantity of terrestrial and phlegmatick Particles, a bad Digestion, occasioned by the Inaction of the Mother, would leave them loaded with; whereby the Fœtus itself would become heavy, lumpish, and almost incapable of moving in the Womb; and at last fix on one Side rather than the other, to which last Accident the little Quantity of the Water it floats in contributes; for as those Waters proceed from the Vapours transpiring from the Child, and condensed against the Membranes he is enveloped in; as those Waters are in a lesser or greater Quantity, according as the Transpiration is greater or lesser, and the Transpiration is greater or lesser, according as the Fœtus is more or less active, it must be reasonably supposed, that a Child who is almost entirely inactive in the Matrice, cannot be environ'd with much Water; and consequently must, in Process of Time, as he grows bigger and heavier, be adherent to the Membranes; which Accidents are prevented by a moderate Exercise, which not only spiritualises his Aliments, but awakes him, likewise, or quickens his Motions in a moderate Manner. I knew a Woman, who having been advised to use little or no Exercise during several Pregnancies, for fear of any Accidents happening to her Children during Gestation, had always a very tedious and painful Labour, till having been advised by me to stir and walk, even to the last Days of her Reckoning, she never was afterwards, longer than two or three Hours in Labour.

So soon as a Woman knows herself with Child, she is not to lace herself too close, for while she expects to save her fine Shape, she prejudices her Child, by confining him within those Stays, and thereby either hindering him from growing, or forcing him to come before his Time, or rendering him counterfeit; and missing besides her chief End; for those Women, who thus endeavour to appear of a fine Shape, though they be big with Child, spoil their Belly, which after their Delivery, remains hanging as a Bag; for the Belly, by being thus confined, finding no Room to dilate itself equally on all Sides, is forced to dilate only towards the Bottom, which bears all the Burthen.

Women with Child being often subject to be hard bound, because the Matrice, by its Weight pressing hard on the intesting *Rectum*, is an Obstruction to the natural Evacuation of the Excrements, those afflicted with

that Incommodity, must abstain from all Sorts of Aliments which could contribute towards it, by increasing the Heat of the Entrails, a Pregnancy is but too often accompanied by it; but above all, from the immoderate Use of those pernicious Liquors, so much in Vogue at present among Women of all Ranks and Conditions, which prove always prejudicial both to the Mother and to her Fruit, whose tender organical Parts are so much parched and imbecillitated therewith, that he brings into the World a precarious Health, which is past the Skill of the best Physician to restore afterwards; whence that Degeneracy in the human Race, which in our Days seem rather composed of Skeletons, or Shadows of Men, than of real Men, occasioned by the Intemperance of the Mother. The frequent Use of roasted Apples, of boiled Prunes, of Figs, and of all that can open the Body, proves very beneficial to Women who find themselves extremely constipated during Gestation; and if those Things are not sufficient, Glysters must be administered to them, of a Decoction of Marshmallows, Parietary and Anis seeds, in which will be dissolved two Ounces of brown coarse Sugar, adding to it a Spoonful of Sweet-Oil; avoiding above all Things those irritating Glysters which could excite a Looseness, or a too great Evacuation, which could cause an Abortion or Miscarriage.

A pregnant Woman should never be frightened nor surprized by any bad News, capable to excite within her an excessive Uneasiness, or Sorrow; for those Passions when violent, are capable to throw the whole Œconomy of the Generation into a Disorder or Confusion, and even make a Woman miscarry at that very Instant.

Vomiting and the Suppression of the Menstrues, are often the first Signs whereby Women perceive that they are with Child. That Vomiting is not always excited, as it has been falsely imagined, by the Humours gathered in the Stomach by the Suppression of the Menstrues, especially in the first Day of their Pregnancy; but it is occasioned by the Sympathy which is between the Stomach and the Matrice, by reason of the Similitude of their Substance, and that the Nerves inferred in the superior Orifice of the Stomach, have Communication by the same Continuity, with those which run to the Matrice, which are Portions of the sixth Pair of those of the Brain; so that the Matrice, which by reason of its membranous Composition, has a very exquisite Sense, happening to dilate itself in the Pregnancy, is then susceptible of some Pain, which being communicated at the same Time by means of the Continuity of the Nerves, to the superior Orifice of the Stomach, causes those Vomiting and Nauseas which commonly happen, especially in the first Month of Gestation.

PROGNOSTICK of this Vomiting.

In the first Month of the Gestation Vomiting is but a simple Symptom, not at all dangerous; but if it continues longer, it extremely debilitates the Stomach, renders the Digestion of the Aliments imperfect, which generates a great Quantity of Humours in that Viscera, which must be purged. Add to this, that the continual Subversions of the Stomach, causing a great Agitation and Compression of the Belly of the Mother, would procure an Abortion.

Note, That the Remedies prescribed by some Physicians, to stop these Vomiting when they last too long, and are too violent, are all Sorts of gentle Catharticks, which purge gently downwards, as Manna, Rhubarb, Tamarins, Cassia, Syrops of Violets, of Chichoræe, &c. For my Part, though I approve this Practice, I would prescribe previously to it some Drops of Laudanum, to appease the convulsive Motions of the Stomach, and then prescribe the Catharticks, to evacuate the Humours which debilitate the digestive Faculty of its Dissolvent.

The Pains in the Loins, Reins, and Groins, to which the Women with Child are subject, proceed from the Dilation of the Matrice, and its excessive Weight and Compression on the neighbouring Parts, which are commonly greater in the first Pregnancies than in the following, where the Matrice only re-assumes the first Dimensions it has had already: For when it has not been

dilated yet, it is much more sensible, and the Ligaments which keep it in its natural Situation, suffer much greater Efforts in the first Pregnancy, having not been extended yet, than afterwards.

But the Pains which Women with Child feel in their Reins, do not always proceed from the same Cause; but sometimes from a nephretick Cholick, which often excite Vomiting, which by their Violence cause such a Commotion in the Matrice, and such an Agitation of the whole Body, that they throw the Woman in Labour.

Note, That the Pains caused by the Extension, Dilation, or even Laceration of the Ligaments of the Matrice, are often remedied by the Woman keeping her Bed for some Days, by bleeding, and by some Fomentations on the Part, made with emollient Herbs, boiled in Lees of Wine. If those Pains, especially those in the Loins, are accompanied with some Excretions of the Matrice, which had not appeared before, and those Excretions are tinged with Blood, it is certain that the Matrice begins to open, and there will be a Miscarriage. If by some violent Shake or Fall the Ligaments of the Matrice be broken, and the Woman cannot be persuaded to keep her Bed, her Belly must be supported by a Bandage made for the Purpose, and wait as patiently as she can for the Time of her Delivery.

As to the Pains in the Breasts. So soon as a Woman has conceived, her monthly Evacuations being stopped, though she continues to make daily new Blood, it is necessary, that as there is none consumed during the first Month of Gestation, the Vessels which are too full, should overflow those Parts which are the most disposed to receive it: As are the Glands and glandulous B. Glands, particularly the Breasts, which receive Abundance of it, which filling and swelling them extremely, causes those Pains which Women with Child feel in them, to which those who have only a Suppression of their Menstrues are subject likewise.

In those Beginnings a Woman must only take Care not to hurt those Parts by lacing her Stays too close, to avoid Contusions, which would perhaps degenerate into Inflammations, and those Inflammations into Abscesses: But when after the third Month of Gestation, the Blood flows thither in too great Abundance, it must be evacuated by bleeding in the Arm, which is the surest Remedy on those Occasions.

The most dangerous Symptoms a Woman with Child is subject to, are a Cough, and a Difficulty of Respiration, especially if the Cough be very violent, which often causes a Miscarriage: Because by its Efforts the Lungs endeavouring to expel from the Breasts what excites the Cough, there happens a Contraction of all the Muscles of the Respiration, which thereby pressing strongly the Air contained within, presses likewise the Diaphragm downwards, and consequently all the Parts of the Abdomen, but particularly the Matrice, which receives then such a Commotion, if the Paroxysm of coughing be strong, and continues a long Time, that thereby the Placenta is sometimes loosened; and then the Matrice being no longer able to contain it, is forced to open, to expel it before the Time appointed by Nature.

The Cough is sometimes caused by acrimonious Secretions, which distill from the Brain on the Trachea, and on the Lungs; and sometimes likewise, by an acrimonious Blood which overflows all the Parts of the Body towards the Breast, after the Suppression of the Menstrues; as also by having caught Cold. The Cough is often increased besides by the Matrice pressing hard on the Diaphragm, which hinders its free Motion.

Whatever may be the Cause of the Cough of a Woman with Child, she must abstain from all the Aliments which could increase it, such as Salt, Pepper, and all Sorts of Acids; using those which can help towards sweetning the Mass of the Blood. I would prescribe to her every other Night, when she goes to Bed, a large Glass of Emulsion, made with the four large Cold-Seeds, and the Syrup of Maidenhairs, and a Dyet Drink made with Jujubes, Dates, and Liquorice.

If the Difficulty of Respiration and Cough proceed from the Matrice pressing too hard on the Diaphragm, which happens often when a Woman is pregnant of

her first Child, than in any other Pregnancy, because the Ligaments of the Matrice are not yet very well extended; there is in my Opinion, no better Remedy than a moderate Exercise, and walking often up and down, whereby the Child being excited to move downwards, causes a greater Extension of those Ligaments, and sets the Diaphragm more at Liberty. Exercise, besides, dissipating the Winds, which otherwise would render the Respiration still more difficult: All other Remedies prescribed on that Occasion are needless.

As to the *various Swellings and Pains in the Thighs and Legs*: Those who have any Knowledge of the Circulation of the Blood, will conceive easily the Reason why several Women with Child have their Thighs and Legs swelled; with Varices in the inward Parts thereof: Which, in my Opinion, proceeds from that Nature being deprived of its ordinary Evacuations by the Suppression of the Menfes; the Blood and other Impurities, which along with it used to be purged by means of those Evacuations, following still their natural Course downwards, but being stopped in the Middle thereof, are thrown by their Propensity downwards on the Right and Left, towards the inferior Parts of the Body, where finding no Vent, they force their Passage through the smallest Fibres remised in those Parts, which they overflow by the Laceration of a great Number of those Fibres; which Extravasation of the Blood and Humours, intercepting in some measure the Circulation of the Blood in those Parts, causes those varicous Swellings, always attended either with Weariness or Pains.

Some begin the Cure of this Distemper by bleeding the Arm, which cannot be disapproved, provided it be not too copiously done, *i. e.* not exceed three Ounces, since by that Means the Air being introduced into the Vessels, accelerates the Circulation of the Blood, whereby it disengages itself, either by insensible Transpiration, and sometimes by a gentle Sweat of the Humours, which otherwise must have fallen into those Parts. Fomentations made with aromatick Herbs boiled in Wine, are a very good Remedy to dissipate the Swelling and Varices, already formed; dipping Pieces of Flanel in the Wine, and applying them on the Parts, as hot as the Patient can suffer it. I would take Care also to purge gently once or twice, the Woman afflicted with those Symptoms.

The same superfluous Blood, stopped by the Suppression of the Menfes, and which I have said causes the varicous Swelling of the Thighs and Legs, causes likewise the *Hemorrhoides* or *Piles*, almost all breeding Women are afflicted with; though they also proceed sometimes from the great Efforts a Woman with Child makes in going to Stool, when she is constipated; because the Matrice being situated on the *Rectum*, renders, by pressing it, the Evacuation of the Excrements contained in it very difficult; and by those Efforts the Blood which is in the neighbouring Vessels being pushed with Violence, swells up their Extremities, to which by its sojourning in them, happen those painful Tumours called *Hemorrhoides*, some of which are internal, and others external, the one small and with but little or no Pain at all.

If they be small and without Pain, whether internal or external, it suffices to hinder them from growing bigger; which may be done by Remedies proper to dissipate the Fluxion, but the Cure of those extremely swelled, must be began by appeasing the Pain, otherwise the Fluxion will increase still more and more; which is done by bleeding the Woman once or twice in the Arm, and ordering her to abstain from Coition, or any Thing else which can contribute towards overheating her. But if the Excrements stopped in the Rectum, be the Cause of the *Hemorrhoides*, they must be evacuated by a Glyster made only with a Decoction of Bran, and some Leaves of Marshmallows, adding to it a Spoonful of Honey, and another of Oil of Sweet Almonds; lining the Canulle or Clyster-Pipe with the Gut of a Chicken, for Fear it should hurt the Anus. The *Piles*, if they be external, must also be anointed with an Ointment made of *Populeum*, and an Oyster-shell calcined, very well pounded, and mixed afterwards with the *Populeum*. This Remedy, which is of my own Invention, I know by Experience to be very efficacious.

If the Tumour be not dissipated by the aforesaid Remedies, Leaches must be applied to the Anus, which by their sucking will empty the Blood stopped in those Parts.

Note, That though by means of the *Hemorrhoides*, there happens in Men an Evacuation which approaches very near the natural, they being eased by it, when they flow moderately, Nature being used to it; it is not so of Women, because the Evacuation which happens sometimes by means of the *Hemorrhoides* in Men, must be made through the Matrice in Women, when they are not with Child; which notwithstanding during Gestation it can in some measure, if the Women be plethorick, supply likewise, the Want of a natural Evacuation; for, provided the *Piles* flow moderately, and without Pain, the Woman can likewise be eased by it; but if they were to flow in too great Abundance, the Mother and Child could be weakened by it. To avoid that Accident, astrigent Fomentations ought to be made to the Part, with a Decoction of Pomegranate's Peel, and red Roses, in the Water of a Forge, to which is added a little Allum; or a Cataplasim applied to it, made of Bole Armoniack, Sanguis Draconis, and Terra Sigillata, with the White of an Egg. A Revulsion should also be made by bleeding in the Arm, and dry Vantouses applied on the Loins.

It happens also, that a Woman with Child is often afflicted with an *immoderate Flux of the Belly*, or *Looseness*.

Note, That there are three different Sorts of these *Fluxes*, the first called *Lienterick*, in which the Aliments are evacuated with but very little Appearance of Digestion, proceeding from the Imbecillity of the Stomach: The second *Diarrhaick*, when the Excrements are evacuated without any considerable Pain in the Intestines: And the third, which is the most dangerous, is the *Dysenterick*, whereby the Patient voids Blood together with the Humours and Excrements, with violent Pains caused by the Ulceration of the Intestines.

Of what Sort soever be the Flux of the Belly, if it be immoderate, and continues long, it always puts the Woman with Child in a great Danger of Abortion. For if the Flux be *Lienterick*, the Aliments flowing from the Stomach almost undigested, and without being converted into Chyle, both the Mother and her Child being thereby deprived of their Food, must become extremely weak. If it be *Diarrhaick*, and continues long, it causes the same Accident, because a great Dissipation of Spirits is made with the Evacuation of the Humours: But the Danger is much greater when the Flux is *Dysenterick*, because then the Woman feels excessive Pains in the Intestines, caused by the Ulceration thereof, whereby she has continual Motions to go to Stool, which occasion a violent Commotion of the Matrice, and of the Child contained therein, and procures at last a Miscarriage; and sometimes causes the Death of the Mother, especially if the Flux does not stop after the Delivery.

To proceed with Safety in the Cure of those different Sorts of Flux, very often occasioned by the Stomach being weakened, by the immoderate Appetite of the Woman with Child, or extravagant Longings; the Nature thereof must be carefully examined. If it be a *lientrick Flux*, caused by the immoderate and extravagant Appetite of the pregnant Woman; that Appetite must be refrained above all Things; in lieu thereof she must make use of good Aliments of an easy Digestion, and in a small Quantity at once, till the Stomach has recovered its former Strength.

When the Flux is *Diarrhaick*, and nothing else is evacuated but the Excrements contained in the Intestines, there is not the least Danger, provided it be not attended with Pains, and does not continue long; when one must content himself then with moderating that Flux without stopping it. But if it lasts longer than four or five Days, it must be stopped by degrees, in purging, by means of gentle Catharticks, the acrimonious Humours, which are the Cause thereof.

But if notwithstanding the aforesaid Regimen and Remedies,

medies, the Flux continues, and is changed into a Dysentery, the Stools of the Patient being very frequent, painful, and bloody, then she is in a great Danger of miscarrying; which must be avoided if possible, by prescribing to her, besides the Remedy above-mentioned, some Drops of Laudanum; and Clysters made with a Decoction of the Leaves and Roots of Plantain, of Red Roses, and Pomegranate-Peel, boil'd in the Water of a Forge, to which may be added two Drachms of Sanguis Draconis. — I have prescribed, with great Success, for those Maladies, an Infusion of Rhubarb in good old red Wine, the Extract of Mars Astringent, and a Julep made of Plantain Water, and Syrrup of Quinces, an Ounce of each, and fifteen Drops of Laudanum. But the Purgatives must be used before the Astringents, since they are prescribed to carry off the Cause of the Distemper, which otherwise would return, even with more Violence than before, if we minded nothing else but how to appease its Symptoms.

We know by a frequent Experience, that though a Woman be with Child, she may have notwithstanding her monthly Evacuations, especially if she is of a sanguine or pituitous Constitution; not through the Bottom of the Matrice, as it is done, when she is not with Child, because that Passage is really stopped by the Placenta adhering to it, but through two Vessels which Nature has appointed for that Use, and which come from the spermatick Vessels.

When a Woman with Child voids Blood downwards, it must be carefully observed whence it flows, and in what Manner; if they be common Menfes, or a true Loss of Blood. If they be common, they'll flow periodically as usual, though not from the Bottom of the Matrice, but from its Neck; which may be easily discover'd, if by introducing the Finger into it, its internal Orifice is found shut close, which would not be if the Blood flowed from the Bottom thereof; as likewise, if it flows without Pain, and in a small Quantity, all which Circumstances are not found in a Loss of Blood, vulgarly called *Floodings*, as we'll see by and by.

It must be examined, likewise, if that Flux proceeds from Superfluity only, or from the Acrimony of the Blood, or from the Debility of the Vessels which contain it; in order to apply proper Remedies.

If the Flux proceeds only from a too great Abundance of Blood, instead of being dangerous, it proves rather beneficial to the Mother and to her Child, when moderate; for if the Matrice was not eased of that superfluous Blood, the Child would be suffocated and drown'd in it; considering that at the Times of those Evacuations, which happens always in the first Months of a Pregnancy, the Child is yet very little.

But if there be no Sign of Abundance or Plenitude, in the Body of the Woman, who before she was with Child, had her Menfes but in a very little Quantity, and which, notwithstanding, flow during her Pregnancy, it is a Sign that the Flux proceeds either from the Heat, and Acrimony of the Blood, or the Debility of the Blood-Vessels. It is of those Women *Hippocrates* speaks, *Aphorism 6.* where he says, that the Child of those who have the Menfes in the Time of Gestation, is not healthy; because his being deprived thereby of the greatest Part of his Subsistence, an Abortion ensues.

To hinder that Flux from producing such an Accident, the Woman must abstain from all Sorts of Exercise, and from all that can over-heat her Blood. Notwithstanding which, if the Flux should continue, a Revulsion must be made, by bleeding in the Arm, if the Strength of the Woman will allow it; prescribing afterwards some pleasant Styptick.

There is a great Difference betwixt the Flux above-mention'd, and what is called a *Loss of Blood*, or *Flooding*; for in this the Blood flows from the Bottom of the Matrice, with Pain in Abundance, and without Interruption, unless some Clods of congealed Blood, seem sometimes to diminish the Accident, by stopping, for a short Time, the Place whence it flows; but soon afterwards, those Clods of Blood being expelled, or falling of themselves into the Matrice, it begins to flow anew, with still greater Violence than before; which soon causes the Death both of the Mother and Child, unless it be remedied, by the quick Delivery of the

Woman; or if she be not far gone in her Pregnancy, by the Expulsion of the Embryo, which I know by Experience gives immediate Relief; and for which I have prescribed with great Success, a few Drops of Oil of *Gujacum*.

When that *Loss of Blood* happens in the first Month of a Pregnancy, it is commonly caused by a false Conception, whereof the Matrice endeavours to disburthen itself; because in the Efforts it makes for that Purpose, some Vessels open in the Bottom thereof, whence Blood flows, without Interruption, till the Matrice has expelled all the foreign Bodies contain'd in its Capacity.

But when that *Loss of Blood* happens to a Woman pregnant of a true Conception, it is likewise by the Opening of the Vessels in the Bottom of the Matrice, caused by some Blow, Fall, or the like; and principally from that the After-Birth, on those Occasions, or on others, happening to be separated either entirely, or in Part, from the Bottom of the Matrice (to which it must be adherent to receive the Aliments of the Child from the Mother) all the Orifices of the Vessels to which it was joined, remain thereby open, whence ensues immediately a great Flux of Blood, which the more advanced is the Term of the Pregnancy, is commonly the more abundant and dangerous; because the Vessels of the Matrice swell in Proportion as the Child grows bigger; and a Loss of Blood, thus caused, cannot be stopped otherwise than by the Delivery of the Woman, because the After-Birth being once separated from the Matrice, was it even but in Part, is never re-united to it; whereas the Matrice, on the contrary, contracting itself immediately after the Delivery, stops by that Contraction of its own Substance, the Orifices of the Vessels, whereby the Loss of Blood ceases; which otherwise continues, while the Matrice is distended by the Child, and the other Things contain'd in its Capacity.

Though it be said, that for the Reasons above-mention'd, the Woman must be deliver'd on that Occasion, to stop the Flux of the Blood; it is not pretended, that so soon as that Flux is perceived, one is to proceed in that Manner; for Losses of Blood, when little, are seen to continue for a whole Month; and others to stop sometimes, by the Woman keeping her Bed, or by bleeding in the Arm. Some Women with Child have been seen to void Blood through the Matrice, in a pretty considerable Quantity, and even in Clods, who, notwithstanding have gone their full Time. That Blood proceeded then from some Vessels which open towards the Outside of the inward Orifice, which notwithstanding remains close all the Time. For though the Blood flowing in Abundance, and in Clods, be commonly a Sign that it flows from the Vessels in the Bottom of the Matrice, and the Sign likewise of an approaching Abortion; it happens, sometimes, notwithstanding, though very seldom, that those Clods of Blood proceed only from that which flows from some Vessels which terminate to the Outside of the internal Orifice; which Blood not coming out of the Matrice so soon as it is out of its Vessel, is clodded in that Manner in the *Vagina*, by sejourning a little in it, by Reason of the Situation the Woman may have been in at the Time the Blood was extravasated. Therefore to judge safely if a Woman with Child, who voids Blood in Clods through the Matrice in a great or moderate Quantity, be ready to miscarry, she must be touched, for if the internal Orifice be found open, as far as into its inward Part, and through that Aperture the Child, or his Membranes, be felt with the Finger to present himself, it is then a very sure Sign, that the Blood comes from the Bottom of the Matrice, and that the Woman will soon miscarry.

If the Blood flows but in a small Quantity, and the Evacuation is of a short Duration, Nature then must be let to operate in the Delivery, provided the Woman has Strength enough, and is not attended with any other dangerous Accident. But when the Blood flows suddenly in so great Abundance, that the Woman falls in frequent Sincops or Convulsions, in that Case the Operation is not to be deferred; and it is absolutely necessary to deliver the Woman, whether she be at Term or not, has Labour-Pains, or none; because there is but that sole Expedient left to save her Life, and that of

of her Child, otherwise her Life will fly with her Blood.

Note, That in such a dangerous Occasion one must not always wait to deliver a Woman, for Pains which force downwards; for though a Woman in that deplorable Condition has felt those Sorts of Pains at first, she seldom has any of them when the Flooding is arrived to that Excess as to cause Sincops or Convulsions; neither ought a Midwife, or Man-midwife to defer till the Matrice be much open, because that great Effusion of Blood humecting it much, and the Sincops relaxing it, cause that it may be then as easily dilated, as if she had had the strongest Pains; which must be done by putting the Woman in a convenient Situation for her Delivery; then the Surgeon or Man-midwife having anointed his Hand with Oil or Pomatum, shall introduce, by little and little, his Fingers joined together, into the Matrice, and part them from one another, when they'll be at the Entrance thereof, to dilate it sufficiently by little and little, and, if possible, without any Violence; which done, and having his Hand entirely in the Part, if he finds that the Membranes of the Water are not broken yet, he shall make no Difficulty to break them, to slide at the same Time his Hand inside of them; after which, whatever Part the Child presents first, was it even the Head (unless it be too far advanced in the Passage) he must always in that Occasion, go to search for the Feet of the Child to draw him out, observing all the Circumstances which I'll mention when I'll speak of the Delivery, where the Child presents the Feet first, because there is a better Hold, and a greater Facility, to draw the Child by the Feet than by the Head, or any other Part; this done, he shall deliver the Woman of her After-birth, which is always very little adherent in those Encounters; taking great Care to leave no Clods of Blood in the Matrice, otherwise the Flux would continue, whenas when nothing is left behind, it ceases by degrees, with all the dangerous Accidents it was attended with.

Note, also, that though I have said, that it is absolutely necessary to deliver the Women who have those great Losses of Blood, to endeavour through that Means to save her Life, and that of her Child; it is not to be expected that they are all saved thereby; for if that necessary Succour is deferred too long, some of them die soon after the Operation; and if the Loss of Blood proceeds from a Wound in the Matrice, or a Laceration of the Substance thereof, caused by a too great Distension, or otherwise, as it sometimes happens (and which cannot be discovered but by opening the Body of the Woman after her Death) then there is no Remedy, and all Women in that deplorable Condition die, though they be even delivered by the sole Operation of Nature, or succoured in Time by a skilful Surgeon; because the Matrice which has suffered Violence by some Wound, or some considerable Contusion, cannot contract itself so exactly after Delivery, nor so well re-unite its Fibres and Substance to stop the Orifices of the Vessels opened by Laceration, as it would do if it had received no Lesion, and the Vessels had been no otherwise opened but by a simple *Anastomosis*; besides, that if the Woman was to survive some Days to her Delivery, an Inflammation happens very easily in the wounded Matrice; which infallibly causes the Death of the Patient.

Note, again, That the frequent fainting Fits, with Loss of Knowledge, convulsive Motions, &c. are almost always certain Signs of Death, when they proceed from a great Loss of Blood in a Woman with Child; one must not neglect on all those Occasions, and even in the most desperate, the Delivery of the Woman, which is the only Remedy in those Cases, though it be not always certain. M. *Mauriceau* says, that he has observed, that the Women who have the internal Orifice of the Matrice, thin, soft, and smooth, are easier saved after the Operation, than those who have it thick, hard, and rough.

As in those great Losses of Blood, there happen always very frequent fainting Fits, one must endeavour to preserve what Strength remains in the Patient, and

increase it if possible, that she may have enough to undergo the Operation, and to escape afterwards; which may be done by moderating the Flux of the Blood, with some efficacious Styptick, which I know by Experience is not impossible, and which is of more Effect than any Thing else which can be administered to the Patient, since it moderates the too excessive Diffipation of the Spirits, and keeps in a greater Quantity of them in the Space of few Minutes, than the greatest Restorative could make in several Hours; though it be not improper to have Recourse to these likewise, provided they be astringent; as good old Red Wine. I have prescribed on those Occasions, some Spoonfuls of Mutton's Juice, extracted without Water, either between two deep Dishes at a very slow Fire, or in Balneo Mariæ, given by Intervals; and the Styptick I have invented has never failed of Success.

As to the Weight, and bearing down, or Relaxation of the Matrice in Women with Child. The Weight of the Matrice, is when Women with Child feel at the Bottom of their Belly an extraordinary Weight, either by reason of the Suppression of their Menfes, or because the Matrice, by the Weight of what is contained in its Capacity, falls on its Neck, and sometimes so low, that they cannot walk but with great Difficulty; at which time it is not likewise possible for them to use Coition.

We call that *bearing down*, or *Relaxation of the Matrice*, when it descends only into the *Vagina*, without coming out at the *Pudendum*; for in that Case it would be a Fall or Precipitation of the Matrice, which is a much more dangerous Malady; which does not happen commonly to Women with Child, because the Extent of the Matrice hinders it from thus precipitating itself entirely. The Precipitation of the Matrice can be seen, and likewise felt by introducing the Finger into the *Vagina*, for one meets presently with the Matrice, and its internal Orifice which is very near the *Pudendum*, particularly when the Woman is standing up.

This *bearing down* is often caused by a Relaxation of the Ligaments of the Matrice, and particularly of the large ones, which must keep it fast on each Side towards the Loins, to hinder it from falling down; which Relaxation proceeds either from the Weight of the Burthen it carries and contains, which causes an uncommon Extension of the Ligaments, or from some Fall, which giving it violent Shakes, produces the same Effects, and much more when the Burthen is heavier; as likewise from a hard Labour, and bad Delivery, which has preceded the present Pregnancy; but it is caused often, or at least facilitated, by an Abundance of Humidity, which soaking those Ligaments, relax them thus; to which are subject Women of a phlegmatick Constitution.

Besides that the *Bearing down* of the Matrice, hinders, as we have already observed, the Woman with Child from walking, and from using freely of Coition; it causes likewise, by its Weight, a Stupor in the Loins, Pains in the Groin, and Numbness in the Thighs: As also a Difficulty of making Water, and of going to Stool, by a Compression of the Bladder, and of the *Rectum*, between which it is situated.

A Woman is easier cured of a *Bearing down of the Matrice*, after her Delivery, than during her Pregnancy; because having been eased of her Burthen, the Ligaments are strengthened with more Facility. Add, that at that Time, Pessaries can be introduced into the Part, to keep it in its natural Situation.

Note, That whatever may be the Cause of the *Bearing down of the Matrice*, the best Remedy is for the Woman to keep her Bed; for while she is up, the Weight of the Part increases the Relaxation of the Ligaments; and if her Circumstances will not allow it, she must wear a Pessary, to keep the Part in its natural Situation: And if her Belly be very high, as it commonly is towards the latter Months, it must be supported by a large Bandage made for that Purpose, to hinder thereby the excessive Extension of the Ligaments. But if the Relaxation of those Ligaments proceeds from superfluous Humidities, the Woman must be purged gently from Time to Time, abstaining from Coition, because in the Action the

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medies, the Flux continues, and is changed into a Dysentery, the Stools of the Patient being very frequent, painful, and bloody, then she is in a great Danger of miscarrying; which must be avoided if possible, by prescribing to her, besides the Remedy above-mentioned, some Drops of Laudanum; and Clysters made with a Decoction of the Leaves and Roots of Plantain, of Red Roses, and Pomegranate-Peel, boil'd in the Water of a Forge, to which may be added two Drachms of Sanguis Draconis. — I have prescribed, with great Success, for those Maladies, an Infusion of Rhubarb in good old red Wine, the Extract of Mars Astringent, and a Julep made of Plantain Water, and Syrrup of Quinces, an Ounce of each, and fifteen Drops of Laudanum. But the Purgatives must be used before the Astringents, since they are prescribed to carry off the Cause of the Distemper, which otherwise would return, even with more Violence than before, if we minded nothing else but how to appease its Symptoms.

We know by a frequent Experience, that though a Woman be with Child, she may have notwithstanding her monthly Evacuations, especially if she is of a sanguine or pituitous Constitution; not through the Bottom of the Matrice, as it is done, when she is not with Child, because that Passage is really stopped by the Placenta adhering to it, but through two Vessels which Nature has appointed for that Use, and which come from the spermatick Vessels.

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If the Flux proceeds only from a too great Abundance of Blood, instead of being dangerous, it proves rather beneficial to the Mother and to her Child, when moderate; for if the Matrice was not eased of that superfluous Blood, the Child would be suffocated and drown'd in it; considering that at the Times of those Evacuations, which happens always in the first Months of a Pregnancy, the Child is yet very little.

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To hinder that Flux from producing such an Accident, the Woman must abstain from all Sorts of Exercise, and from all that can over-heat her Blood. Notwithstanding which, if the Flux should continue, a Revulsion must be made, by bleeding in the Arm, if the Strength of the Woman will allow it; prescribing afterwards some pleasant Styptic.

There is a great Difference betwixt the Flux above-mention'd, and what is called a *Loss of Blood*, or *Flooding*; for in this the Blood flows from the Bottom of the Matrice, with Pain in Abundance, and without Interruption, unless some Clods of congealed Blood, seem sometimes to diminish the Accident, by stopping, for a short Time, the Place whence it flows; but soon afterwards, those Clods of Blood being expelled, or falling of themselves into the Matrice, it begins to flow anew, with still greater Violence than before; which soon causes the Death both of the Mother and Child, unless it be remedied, by the quick Delivery of the

Woman; or if she be not far gone in her Pregnancy, by the Expulsion of the Embrio, which I know by Experience gives immediate Relief; and for which I have prescribed with great Success, a few Drops of Oil of *Gujacum*.

When that *Loss of Blood* happens in the first Month of a Pregnancy, it is commonly caused by a false Conception, whereof the Matrice endeavours to disburthen itself; because in the Efforts it makes for that Purpose, some Vessels open in the Bottom thereof, whence Blood flows, without Interruption, till the Matrice has expelled all the foreign Bodies contain'd in its Capacity.

But when that *Loss of Blood* happens to a Woman pregnant of a true Conception, it is likewise by the Opening of the Vessels in the Bottom of the Matrice, caused by some Blow, Fall, or the like; and principally from that the After-Birth, on those Occasions, or on others, happening to be separated either entirely, or in Part, from the Bottom of the Matrice (to which it must be adherent to receive the Aliments of the Child from the Mother) all the Orifices of the Vessels to which it was joined, remain thereby open, whence ensues immediately a great Flux of Blood, which the more advanced is the Term of the Pregnancy, is commonly the more abundant and dangerous; because the Vessels of the Matrice swell in Proportion as the Child grows bigger; and a Loss of Blood, thus caused, cannot be stopped otherwise than by the Delivery of the Woman, because the After-Birth being once separated from the Matrice, was it even but in Part, is never re-united to it; whereas the Matrice, on the contrary, contracting itself immediately after the Delivery, stops by that Contraction of its own Substance, the Orifices of the Vessels, whereby the Loss of Blood ceases; which otherwise continues, while the Matrice is distended by the Child, and the other Things contain'd in its Capacity.

Though it be said, that for the Reasons above-mention'd, the Woman must be deliver'd on that Occasion, to stop the Flux of the Blood; it is not pretended, that so soon as that Flux is perceived, one is to proceed in that Manner; for Losses of Blood, when little, are seen to continue for a whole Month; and others to stop sometimes, by the Woman keeping her Bed, or by bleeding in the Arm. Some Women with Child have been seen to void Blood through the Matrice, in a pretty considerable Quantity, and even in Clods, who, notwithstanding have gone their full Time. That Blood proceeded then from some Vessels which open towards the Outside of the inward Orifice, which notwithstanding remains close all the Time. For though the Blood flowing in Abundance, and in Clods, be commonly a Sign that it flows from the Vessels in the Bottom of the Matrice, and the Sign likewise of an approaching Abortion; it happens, sometimes, notwithstanding, though very seldom, that those Clods of Blood proceed only from that which flows from some Vessels which terminate to the Outside of the internal Orifice; which Blood not coming out of the Matrice so soon as it is out of its Vessel, is clotted in that Manner in the *Vagina*, by sejourning a little in it, by Reason of the Situation the Woman may have been in at the Time the Blood was extravasated. Therefore to judge safely if a Woman with Child, who voids Blood in Clods through the Matrice in a great or moderate Quantity, be ready to miscarry, she must be touched, for if the internal Orifice be found open, as far as into its inward Part, and through that Aperture the Child, or his Membranes, be felt with the Finger to present herself, it is then a very sure Sign, that the Blood comes from the Bottom of the Matrice, and that the Woman will soon miscarry.

If the Blood flows but in a small Quantity, and the Evacuation is of a short Duration, Nature then must be let to operate in the Delivery, provided the Woman has Strength enough, and is not attended with any other dangerous Accident. But when the Blood flows suddenly in so great Abundance, that the Woman has frequent Sincops or Convulsions, in that Case the Operation is not to be deferred; and it is absolutely necessary to deliver the Woman, whether she be at Term or not, has Labour-Pains, or none; because there is but that sole Expedient left to save her Life, and that

of her Child, otherwise her Life will fly with her Blood. *Note*, That in such a dangerous Occasion one must not always wait to deliver a Woman, for Pains which force downwards; for though a Woman in that deplorable Condition has felt those Sorts of Pains at first, she seldom has any of them when the Flooding is arrived to that Excess as to cause Sincops or Convulsions; neither ought a Midwife, or Man-midwife to defer till the Matrice be much open, because that great Effusion of Blood humecting it much, and the Sincops relaxing it, cause that it may be then as easily dilated, as if she had had the strongest Pains; which must be done by putting the Woman in a convenient Situation for her Delivery; then the Surgeon or Man-midwife having anointed his Hand with Oil or Pomatum, shall introduce, by little and little, his Fingers joined together, into the Matrice, and part them from one another, when they'll be at the Entrance thereof, to dilate it sufficiently by little and little, and, if possible, without any Violence; which done, and having his Hand entirely in the Part, if he finds that the Membranes of the Water are not broken yet, he shall make no Difficulty to break them, to slide at the same Time his Hand inside of them; after which, whatever Part the Child presents first, was it even the Head (unless it be too far advanced in the Passage) he must always in that Occasion, go to search for the Feet of the Child to draw him out, observing all the Circumstances which I'll mention when I'll speak of the Delivery, where the Child presents the Feet first, because there is a better Hold, and a greater Facility, to draw the Child by the Feet than by the Head, or any other Part; this done, he shall deliver the Woman of her After-birth, which is always very little adherent in those Encounters; taking great Care to leave no Clods of Blood in the Matrice, otherwise the Flux would continue, whenas when nothing is left behind, it ceases by degrees, with all the dangerous Accidents it was attended with.

Note, also, that though I have said, that it is absolutely necessary to deliver the Women who have those great Losses of Blood, to endeavour through that Means to save her Life, and that of her Child; it is not to be expected that they are all saved thereby; for if that necessary Succour is deferred too long, some of them die soon after the Operation; and if the Loss of Blood proceeds from a Wound in the Matrice, or a Laceration of the Substance thereof, caused by a too great Distension, or otherwise, as it sometimes happens (and which cannot be discovered but by opening the Body of the Woman after her Death) then there is no Remedy, and all Women in that deplorable Condition die, though they be even delivered by the sole Operation of Nature, or succoured in Time by a skilful Surgeon; because the Matrice which has suffered Violence by some Wound, or some considerable Contusion, cannot contract itself so exactly after Delivery, nor so well re-unite its Fibres and Substance to stop the Orifices of the Vessels opened by Laceration, as it would do if it had received no Lesion, and the Vessels had been no otherwise opened but by a simple *Anastomosis*; besides, that if the Woman was to survive some Days to her Delivery, an Inflammation happens very easily in the wounded Matrice; which infallibly causes the Death of the Patient.

Note, again, That the frequent fainting Fits, with Loss of Knowledge, convulsive Motions, &c. are almost always certain Signs of Death, when they proceed from a great Loss of Blood in a Woman with Child; one must not neglect on all those Occasions, and even in the most desperate, the Delivery of the Woman, which is the only Remedy in those Cases, though it be not always certain. *M. Maurisau* says, that he has observed, that the Women who have the internal Orifice of the Matrice, thin, soft, and smooth, are easier saved after the Operation, than those who have it thick, hard, and rough.

As in those great Losses of Blood, there happen always very frequent fainting Fits, one must endeavour to preserve what Strength remains in the Patient, and

increase it if possible, that she may have enough to undergo the Operation, and to escape afterwards; which may be done by moderating the Flux of the Blood, with some efficacious Styptick, which I know by Experience is not impossible, and which is of more Effect than any Thing else which can be administered to the Patient, since it moderates the too excessive Diffipation of the Spirits, and keeps in a greater Quantity of them in the Space of few Minutes, than the greatest Restorative could make in several Hours; though it be not improper to have Recourse to these likewise, provided they be astringent; as good old Red Wine. I have prescribed on those Occasions, some Spoonfuls of Mutton's Juice, extracted without Water, either between two deep Dishes at a very slow Fire, or in Balneo Mariæ, given by Intervals; and the Styptick I have invented has never failed of Success.

As to the *Weight, and bearing down, or Relaxation of the Matrice in Women with Child*. The *Weight of the Matrice*, is when Women with Child feel at the Bottom of their Belly an extraordinary Weight, either by reason of the Suppression of their Menfes, or because the Matrice, by the Weight of what is contained in its Capacity, falls on its Neck, and sometimes so low, that they cannot walk but with great Difficulty; at which time it is not likewise possible for them to use Coition.

We call that *bearing down, or Relaxation of the Matrice*, when it descends only into the *Vagina*, without coming out at the *Pudendum*; for in that Case it would be a Fall or Precipitation of the Matrice, which is a much more dangerous Malady; which does not happen commonly to Women with Child, because the Extent of the Matrice hinders it from thus precipitating itself entirely. The Precipitation of the Matrice can be seen, and likewise felt by introducing the Finger into the *Vagina*, for one meets presently with the Matrice, and its internal Orifice which is very near the *Pudendum*, particularly when the Woman is standing up.

This *bearing down* is often caused by a Relaxation of the Ligaments of the Matrice, and particularly of the large ones, which must keep it fast on each Side towards the Loins, to hinder it from falling down; which Relaxation proceeds either from the Weight of the Burthen it carries and contains, which causes an uncommon Extension of the Ligaments, or from some Fall, which giving it violent Shakes, produces the same Effects, and much more when the Burthen is heavier; as likewise from a hard Labour, and bad Delivery, which has preceded the present Pregnancy; but it is caused often, or at least facilitated, by an Abundance of Humidity, which soaking those Ligaments, relax them thus; to which are subject Women of a phlegmatick Constitution.

Besides that the *Bearing down* of the Matrice, hinders, as we have already observed, the Woman with Child from walking, and from using freely of Coition; it causes likewise, by its Weight, a Stupor in the Loins, Pains in the Groin, and Numbness in the Thighs: As also a Difficulty of making Water, and of going to Stool, by a Compression of the Bladder, and of the *Rectum*, between which it is situated.

A Woman is easier cured of a *Bearing down of the Matrice*, after her Delivery, than during her Pregnancy; because having been eased of her Burthen, the Ligaments are strengthened with more Facility. Add, that at that Time, Pessaries can be introduced into the Part, to keep it in its natural Situation.

Note, That whatever may be the Cause of the *Bearing down of the Matrice*, the best Remedy is for the Woman to keep her Bed; for while she is up, the Weight of the Part increases the Relaxation of the Ligaments; and if her Circumstances will not allow it, she must wear a Pessary, to keep the Part in its natural Situation: And if her Belly be very high, as it commonly is towards the latter Months, it must be supported by a large Bandage made for that Purpose, to hinder thereby the excessive Extension of the Ligaments. But if the Relaxation of those Ligaments proceeds from superfluous Humidities, the Woman must be purged gently from Time to Time, abstaining from Coition, because in the Action the

Penis

Penis striking with Violence against the internal Orifice of the Matrice, could chance to make it open before Term, and thereby cause a Miscarriage.

As to the *Hydropsy of the Matrice*, it is nothing else but a Quantity of Water gathered in the Capacity of the Matrice. This Accident has often deceived Physicians, Surgeons, Midwives, and the Patients themselves, who expecting to be delivered of a Child, void only Abundance of Water.

These Waters are either generated in the Matrice, or carried thither from other Parts, as when in the *Hydropsy of the Abdomen*, they pass by Transudation, through the porous Substance of the Membranes of the Matrice.

They are generated in the Matrice, when it is too much cooled or debilitated, by a bad and violent Delivery which has preceded, or because the superfluous Impurities it used to void, have been a long Time suppressed.

When the Waters contained in the Capacity of the Matrice come from other Parts, they are not enveloped in particular Membranes, and are only retained by the internal Orifice of the Matrice being exactly closed, and flow as soon as it begins to open.

But if they be generated in the Matrice (which happens principally after Coition, from the Seeds being too cold, aqueous, or corrupted) then they are sometimes contained in Membranes; in which Case a Woman is not so soon delivered of them, but carries them often very near as long as a Child. It is this Sort of *Hydropsy* which causes that at the Beginning, she imagines herself really with Child, but the Indisposition continuing longer than the ordinary Term of Pregnancy, she loses all Hope; and the longer this Malady lasts, the more a Woman is in Danger of her Life, increasing sometimes to that Excess, that Women have been seen to have more than thirty Quarts of Water contained in their Matrice.

Note, That *Wassale* says to have opened a Woman, in whose Matrice he found above sixty Measures of Water, each Measure containing three Pints. *Schenkius, lib. 4. observ.* relates several Histories of that Nature, particularly of a Woman whose Matrice was found so excessively full of Water, and so prodigiously extended, that it was capable to contain a Child of ten Years of Age.

One will be capable to know easily, and distinguish the *Hydropsy of the Matrice* from a true Pregnancy, if he reflects on all the Signs I have mentioned in speaking of a true Pregnancy, which are not commonly discovered in that Malady. It is true, that a Woman will have then her Belly swelled, and a Suppression of Menses, as in a true Pregnancy; but there will be several other Signs to shew the Difference; for in the *Dropsy* the Breasts are flabby, and hanging down, there is a greater Weight, and more Pains in the Belly, and the Completion of the Woman is much worse, than if she was really big with Child.

As this *Hydropsy* can happen alone, it also accompanies sometimes a true Pregnancy, those Waters being contained without the Membranes of the Child, in the Capacity of the Matrice; for though there be much Water in those Membranes, it is not properly an *Hydropsy of the Matrice*, because there is always some naturally, in which the Child swims; which notwithstanding, they are sometimes in it in so great a Quantity, and swell so prodigiously the Belly of the Woman, that she is thought to be big with two or three Children, though she be but with one, who is extremely weakened, because the greatest Part of his Food is dissolved into Water, which almost extinguishes and suffocates what remains in him of natural Heat. Some Women have been seen to void two or three Pints of those Waters, two or three Months before their Delivery; when that happens the Waters are then in the Matrice without the Membranes of the Child, for otherwise the Child would come out soon after the voiding of those Waters.

Note, That the voiding of those Waters during Gestation, can also proceed from Part of those the Child swims in, after a slight Rupture or Laceration of their Membranes. I say, of a Part only; for if they

were voided entirely; the Labour would soon follow that Evacuation.

Note, also, that the *Hydropsy of the Matrice* can succeed to the Generation of the Child; but that a Generation can never be accomplished in a Matrice which is hydrofical, because it should open to receive the Seed, in which Case, the Waters contained in the Matrice would be either immediately voided, or corrupt the Seed received.

The best Remedy for those Sorts of *Hydropsies*, if there be a Child with it, is to wait with Patience the Hour of the Delivery, using at the same Time of definitive Remedies. If there be nothing but Water contained in the Matrice, the Half-bath is very proper to make it open, as are likewise all the Remedies which provoke the Menses, and if those Remedies have no Effect, the Woman must be prescribed the Use of Mineral Waters.

As to the *œdematous Swelling of the Labia of the Pudendum*. The Matrice is often so full of Humidities, that they overflow on the outward Parts, especially on the neighbouring, viz. on the Labia of the Pudendum, whereby they become so big, and so much tumified in some Women, that they cannot approach their Thighs near one another; which is the Cause that they walk but with the greatest Difficulty.

It has been observed, that Women big with several Children are very subject to that Indisposition, towards the latter Months of their Pregnancy; and that at that Time they have always their Legs much swelled.

This Swelling of the Labia of the Matrice is then lucid and almost transparent, much like an Hydrocele, because of the great Quantity of clear Water it is filled with; and as it could be very painful, and troublesome to the Woman during her Labour, because by that Swelling the Passages are rendered narrower, it must be remedied before; which must be done by opening the Ways of the Urine, with some Diureticks; for those Swellings proceed often from the Obstruction of the Reins, or else by making, if it be necessary, some slight longitudinal Scarifications on those Labia, whereby the Humidities are evacuated by degrees, anointing the Part afterwards with the Unguentum of Roses, and applying upon it Compresses dipped in aromack Wine, to hinder the Recidive.

When those Tumours are œdematous only, and without Fever, though they be ever so big, they are not commonly dangerous, if they be remedied in the Manner above prescribed; but when they proceed from an Inflammation of those Parts, which is always attended with Fever; then the Woman dies of it, a few Days after her Delivery, because the Inflammation which appears at those external Labia, is but an Effect and Communication of that which is inside of the Matrice. According to *Hippocrates, Aphorism. 43. lib. 5. Si mulieri prægnanti fiat in utero erysipelas, lethale est.*

Note, That the Labia of the Vulva have been seen in pregnant Women, much swelled by a Quantity of Varices, which rendered the Tumour very uneven, and caused in it a dolorous Pruritus. That Accident happens to Women who are of a too sanguine Constitution, and are commonly very hard bound; which to remedy, they must be let Blood in the Arm, their Belly kept open, and they abstain from Coition.

As to the *Veneréal Disease* a Woman with Child may be afflicted with. It is not very difficult to conceive, how a Woman with Child, and infected with the *Veneréal Disease*, communicates it to the Child in her Womb, because that contagious Malady corrupting the whole Mass of the Blood of the Mother, it is impossible the Child fed with that corrupted Substance, should not be infected therewith.

The *Veneréal Disease*, which is but of one same Kind in its Essence, and is only distinguished by its Degree into more or less, communicating itself to the Child, by Means of the Substance of the Mother he feeds upon, makes more or less Impression on his tender Body, as the Degree thereof is greater or less: And if the Woman with Child has Ulceries very near her Matrice, viz. in its Neck, or the neighbouring Parts; the Venom, by

that Proximity, will be still easier carried to him.

As to the *Cure of this Distemper in Women with Child*,—When a Woman is in the latter Months of her Pregnancy, one must wait till after her Delivery to attempt the Cure, and likewise, that of her Child, if he be infected therewith; because the Delivery happening, while the Woman is under Cure, she would be in Danger of her Life; and if her Child at that Time was to come dead into the World, his Death would be attributed to the Violence of the Remedies, and the Surgeon accused of Temerity.

When the Disease is gone yet no farther than its first Degree, and is not attended with great Accidents, the eradicated Cure thereof, must be, likewise, deferred, till after the Delivery, and prescribe but palliative Remedies, as a convenient Regimen, some gentle Purgatives, reiterated from Time to Time, to stop the Progress of the Disease. But if the Woman be yet but in the first Months of her Pregnancy, and has the Venereal Disease to the last Degree, accompanied with dangerous and continual Symptoms, which are Indications, that it is almost impossible she could wait till her Delivery, to be treated; because being yet very far from her Term, those Symptoms increasing more and more, would corrupt her Fruit, and cause a Miscarriage; in that Case, to avoid the greatest of the two Evils, if she has a sufficient Strength, the Cure may be attempted; which must be done by administering to her the Remedies gently, and with Circumspection; so that the Evacuations be smaller and last longer; rather than procure them too violent, and too sudden.

Some are of Opinion, that the Frictions, in the superior Parts only, are to be preferred to any other Remedies; and that no mercurial Preparations are to be administered inwardly; because, say they, they would put the Woman in Danger of miscarrying, by the continual Efforts she would be obliged to make to go to stool, whereby the Matrice would be extremely agitated. But my Sentiment is, that gentle mercurial Preparations, can be administered inwardly, and safely, in those Cases, as well to a pregnant Woman, as to any other Person; since there are mercurial Preparations, which purge so very gently, and without the least Effort, that they can be administered, even to Children, not above four or five Years of Age; and far preferable to the Frictions, which let them be made on what Part of the Body one pleases, shake always the whole Frame, relax the Parts, and consequently the Ligaments of the Matrice with the rest.

Note, That the Sentiment that the Cure of a Woman infected with the Venereal Disease, and with Child, can be attempted, even with Hope of Success, during the Time of Gestation, is confirmed by an Example given by the famous M. *Mauriceau*, who says, that in 1660, while he practised *Midwifry*, at the *Hotel Dieu*, at *Paris*, a young Woman, which he took for a Lady of Pleasure, came to lay in there of her second Child; who having been infected with the Venereal Disease before her first Pregnancy, was delivered before Term, then, of a dead Child, and all rotten with that Distemper. But when she was with Child for the second Time, perceiving that the Accidents of her Malady increased more and more, she judg'd that there was no Hope that her second Pregnancy should succeed better than the first; because she had all over her Body, and particularly in her Breasts, a Quantity of malignant Ulcers, which increased daily; and was afraid they would turn at last into a Cancer, before she could be ready to lay in, being but yet three Months gone: She took the Resolution then to undergo a thorough Cure; and to run the Risk of her Life, in order to go her full Time, and be deliver'd of a live Child, thinking that it was not possible she could do it otherwise, or herself resist the frequent dangerous Symptoms of her Malady, which increased more and more every Day. She communicated her Design to three or four Surgeons, telling them, at the same Time, that she was with Child; who all three refused to undertake the Cure, while she was pregnant, because she would be then in an imminent Danger of her Life, but advised

her to wait with Patience till after her Delivery; when they would be at her Service. Therefore as she saw, that none would perhaps undertake it, unless she concealed her Pregnancy, which, she being but three Months gone with Child was not very discernible, she applied herself to another, who knowing nothing of her Pregnancy, treated her, as it is customary in those Maladies, and besides the other Remedies used on those Occasions, gave her by five or six reiterated Frictions, a copious Salivation, which lasted five whole Weeks, whereby she was perfectly cured, without feeling afterwards the least Symptoms of her former Distemper, went her full Time, at the End whereof she was deliver'd, by the same M. *Mauriceau*, of a strong and healthy Child: And what was the more surprising, in that Case, is, that the After-Birth, which is the more susceptible of Corruption, was clear, red, very fine, and very sound.

I'll conclude this concise Detail of the Maladies a Woman with Child is subject to, by the *Abortion*, and *Causes thereof*. When a Woman voids what had been retained in the Matrice, after Conception, that's called *Effluxion*, i. e. running of the Seeds; because at that Time they have not acquired yet any solid Consistence. If she throw out a false Conception (which commonly happens from the End of the first, to that of the second Month) we call it *Expulsion*; but when the Child is already formed, and has began to have Life, let him be ever so little, if he happens to come out before the Time appointed by Nature, it is an *Abortion*; which can happen from the End of the second Month, or even before, to that of the seventh only; for after that Time, it is always a true Labour; because the Child being then strong enough, and having a sufficient Perfection, can live, which he cannot before that Time. This previously understood I'll say, that,

ABORTION, is the Child coming imperfect out of the Matrice, before the Time appointed by Nature; which is the Cause that he often comes out dead; or if he be alive, he dies soon after he is born.

All Sorts of violent Maladies, can be the Cause of *Abortion*, because they kill the Child, who being dead cannot remain long in the Matrice; which also puts the Mother in Danger of her Life, who often perishes soon after her Miscarriage, or even before. Even intermittent Fevers alone, can cause an *Abortion*, by exciting false Pains in the Womb, which occasion a real Labour; and are excited by the Fermentation of the Waters the Child swims in, extremely heated in the Time of the hot Paroxysm of the Fever, and by that of the Blood, which is in great Abundance in all the Vessels of the Placenta, of the Matrice, and of the neighbouring Parts; for those Waters taking up much more Space than usual, when thus over-heated, as well as the Blood, cause a great Distension of the Membranes they are contain'd in, whereby the Matrice is irritated; as also by the too frequent Motions of the Child, who stirs extraordinarily at the same Time the Fever redoubles.

The particular Causes of *Abortion*, are all the Accidents heretofore mention'd; and a violent and frequent Vomiting, which deprives both the Mother and Child of their Food, when the Aliments are thus expelled from the Stomach, and causes her to make violent Efforts, whereby the Matrice is violently compressed, and at last forced to disburthen itself before the Time.—The Pains in the Loins, and the violent Cholicks, can also cause the same Accident. Likewise the Strangury, because there happens then continually, very strong Compressions of the Abdomen, for the Evacuation of the Urine.—A violent Cough by its frequent Agitation pushing suddenly and with great Efforts the Diaphragm downwards, gives, likewise, violent Shakes to the Matrice.—A violent Looseness puts a Woman with Child in Danger of miscarrying; and much sooner, if afterwards there happens a Tenesmus, i. e. frequent and violent Motions to go to stool, whereby the Intestine *rectum*, endeavours to evacuate certain acrimonious Humours, which continually irritate its Membranes; for in that Occasion the Matrice which is situated on that Intestine, receives a very great Commotion.

If the Menstrues flow much during Gestation, it is impossible

possible the Child should be strong, since in that Evacuation, there happens a very great Diffipation of the Spirits of the Mother; and the Matrice being too much humected, relaxes and opens easily.

But one of the most dangerous Accidents, which cause an *Abortion* or Miscarriage, is the Separation of the After-Birth from the Matrice heretofore mention'd. — The Hydropsy of the Matrice hinders the Child from being brought to Perfection; for the too great Abundance of Water extinguishes the natural Warmth, already much debilitated.

All that agitates, and shakes violently the Body of a Woman with Child, is capable to cause a Miscarriage; as a violent Work, a strong Contusion, or Motion, either in Falling, Jumping, Dancing, running a Foot, or on Horseback, riding in a Coach, or in a Cart, Hollowing, Laughing immoderately, or some Blow received on the Belly; because by those Agitations and Comotions, there happens a Relaxation of the Ligaments of the Matrice, which even break sometimes, as likewise the After-birth, and the Membranes of the Matrice are separated from it. — A sudden and unexpected violent Noise, like that of Thunder, Cannon, &c. can also cause an Abortion, if it be attended with Fear, especially in young Women, because their Body, says *Mauriceau*, being more tender and transpirable than that of those more advanced in Years, the Air being excessively agitated by that Noise, introduces itself into the Pores, whereby it agitates violently both the Matrice and the Fœtus. But this Reason does not seem satisfactory to me; for I am rather of Opinion, that by the great Surprise caused by such an unexpected Noise, in a timorous Woman, there happens a Stagnation of the animal Spirits in her Body, whereby the Child being deprived of them all on a sudden, as of an indispensable and necessary Supply on which his Life depends, he struggles extremely for it, and in those violent Agitations, the Ligaments of the Matrice are either loosen'd or broken; and sometimes the After-birth separated from the Matrice, whence a Miscarriage ensues. — Fœtid and stinking Smells, can also contribute to a Miscarriage, and particularly that of Charcoal.

There are also Indispositions of the Matrice, which produce the same Accident; as when it is callous or so small, or so much compressed by the Epiplon, that it cannot extend itself so much as it is necessary to lodge the Child at Ease, with the After-Birth and the Waters he swims in. — This can happen, likewise, if the Woman, to appear a fine Shape, laces herself too close, or makes Use of a Busk. — The frequent Use of Coition, especially towards the latter Months of Gestation, can produce the same Accident; because the Matrice then being extremely full, inclines much downwards, and its internal Orifice being very near, is pushed upwards by the Penis, which thereby excites it sometimes to open sooner than it should.

If Women with Child miscarry without having suffered any of the Accidents above-mention'd, it is either by Reason of the Smallness of their Shape, lean Women who miscarry in the second or third Month, without any manifest Cause, because the Cotyledons of the Matrice (which are the inward Orifices of its Vessels) are full of a slimy Matter, which hinders it from retaining the Fœtus. Pitting Women are very subject to that Accident, as well as those who have a great Abundance of the *Whites* (as they call it) the continual Affluence thereof, humect so much the Inside of the Matrice, and renders it so slippery, that the Placenta cannot adhere to it; which also relaxes it, and its internal Orifice in such a Manner, that the least Accident causes a Miscarriage. The same Thing happens to Women who have too much Blood, as those who have their Menstrues in great Abundance, before they are with Child: Because the great Quantity of Blood stopped by their being pregnant, breaks forth sometimes all on a sudden, whereby the Child is suffocated, and the Matrice opened for his Expulsion.

A passionate Woman, is also very subject to Abortion, because in the frequent Paroxysms of her Rage, the Circulation of the animal Spirits is so excessively accelerated and disturbed, that it throws the whole Matrice into a Sort of Convulsion.

There are likewise, Causes of Abortion which proceed from the Children themselves, as when they are monstrous; when they have not a natural Situation; which disturb them so much, that they force the Matrice to expel them; and likewise when they are so big that it cannot contain them till Term, nor the Mother supply them with a sufficient Quantity of Aliments.

As to the *Signs of an approaching Miscarriage*. — If one perceives, that after one, or several of the Accidents above specified, a Woman has a great Pain in her Belly, and about her Loins, and with it, some Clods of Blood are voided through the Matrice, and the Membranes of the Child are broken, they are sure Signs of an approaching Miscarriage, which in that Case cannot be prevented by any Remedy whatever. If a Woman feels a great Weight in her Belly, which falls as a Lump on that Side the Child lies, and her Matrice voids stinking and cadaverous Humidities, it is a Sign that she is to miscarry soon of a dead Child.

It is certain, that a Woman who miscarries, is in a much greater Danger of her Life, than one who goes her full Time; because, as I have observed already, Abortion is entirely against Nature, and is very often accompanied with a great Loss of Blood, which is more or less dangerous, according as the Cause of Abortion is more or less violent, whether it has been occasioned by Remedies taken inwardly, or by some Blow, Fall, &c.

Note, That first Miscarriages always put a Woman in Danger of a Recidive; and there are even many Women, who are afraid of being ever capable to have any Children, because they have miscarried the first Time; to which those newly married are very subject, occasioned by the violent Emotion of the whole Body, excited by ardent and frequent Coitions; which notwithstanding they preserve their Fruit after their Love has been a little fatiated and cooled. *Aetius* says, that Abortion is more dangerous in a strong Woman, whose Matrice is tough and dense, than in any other. And *Hippocrates*, lib. de septim. assures us, that there happens more Abortions in the first two Months, than in all the others.

The best and most specifick Remedies for all the external Accidents, which can cause an Abortion, is the Repos; which must be proportioned to the Violence of the Accident. As for the other Remedies which can be administer'd on those Occasions, I refer the Reader to what I have said of them already, to avoid a Repetition; observing however, in this Place, that if a Woman is to be let blood, after a violent Fall, Blow, &c. to prevent a Miscarriage, it should be done as soon as possible, without any Fear of accelerating the Miscarriage; far from it, since there is not a better Remedy to keep the Child in the Womb, for by that Means, the Quantity of the Blood being diminished, it is hinder'd from flowing with too great Abundance towards the Matrice; and makes it take another Road.

Note, That all those who are called to treat Women with Child in their Maladies; must take a particular Care to prevent as much as possible, and by all Sorts of Remedies, a Miscarriage, in a Woman afflicted with a continual Fever; for almost all the Women to whom that Accident happens, die soon afterwards; and especially those whose Fever is accompanied with a Fluxion in the Breast. Without flattering themselves with the vain Hopes, that the great Evacuation occasioned by the Delivery, can abate the Fever; and the Woman render'd more capable to take the necessary Remedies. Far from it, for the Fever increases immediately after, and redoubles by the entire Suppression of the Evacuations, which always happens then, and those Impurities falling on the inward Parts, form there a Depositum, which is always mortal.

Note also, That from this theoretical Part of *Midwifery*, treating of all that happens before, and after Conception; and of all the Maladies and Accidents a Woman with Child is subject to, during the whole, and different Times of her Pregnancy, I'll pass to the practical Part thereof; where I'll treat of a *natural Labour*, and of those which are *against Nature*, teaching the Man-

ner of helping a Woman in the former, and how to remedy to all the others; beginning by informing the Reader what we understand by *Delivery*, the *Differences*, and *different Terms thereof*.

We understand by *Delivery* the Emission, or Extraction of a Child at Term, out of the Matrice; which Definition includes both the *natural Labour*, and those *against Nature*.

To know the Difference between a *natural Labour*, and that *against Nature*, we must observe that there are four Conditions required, without which a Labour cannot be accounted *natural*. The first is, that it must be at Term; the second, that it be *quick*, and without any considerable Accident; the third, that the Child be *alive*; and the fourth, that he be *well formed*, and presents himself in a *natural Situation*: For if there be any of those four Conditions wanting, the Labour is *against Nature*; and much more so, if several of them are wanted.

Note, That several very great Disputes and Difficulties have arisen in all Ages, relating to the first of the Conditions above-mentioned; of which Women of a licentious Life have often attempted to take Advantage; we must notwithstanding inform them in this Place, that all Authors, Physicians, as well as Lawyers, have agreed at last among themselves, that the most ordinary Terms, are the seventh Month, and the Ninth, and particularly the ninth. *Hypocrates* is of Opinion, that a Child coming at eight Months cannot live, because he cannot bear to make so strong Efforts so near one another; having already endeavoured to come out at the seventh Month, which (says he) is the first legitimate Term of Delivery; which having been incapable to accomplish, and repeating the same Efforts at the eighth Month, if he comes into the World at that Time, he is so much debilitated, that it is impossible he could live; which cannot be said if he comes in the first Attempt he makes in the seventh Month, his Strength having not been exhausted before by vain Efforts.

Others on the contrary pretend, that *Hypocrates's* Sentiment is contrary to Experience, because none but the Matrice alone, assisted by the Compression of the Muscles of the Abdomen and of the Diaphragm makes the Expulsion of the Child, when being irritated by its Bigness and Weight, it can extend itself no further to contain him; which is not done, say they, according to this vulgar Opinion, that the Child (being grown so big, that the Aliments he receives from his Mother are no longer sufficient for his Subsistence, and wanting Room to stir) makes violent Efforts to come out, and in those Efforts breaks with his Feet the Membranes which contain the Waters he swims in, since if the Labour be *natural*, it is the Head, which pressing and pushing the Waters at every Pain the Woman feels, makes the Membranes to burst at last with Violence: Therefore those Gentlemen cannot agree, that the Children born at seven Months, live sooner than those born at eight, pretending, that on the contrary, they know by Experience, that Children are stronger, the nearer they approach the most natural Term, which is that of nine Months, for which Reason the Children born at eight Months live sooner than those born at seven.

My Sentiment is, that in natural Labours a Child falls from the Womb like a ripe Fruit from a Tree, when brought to its last Perfection; that after that Fall, the Part he is contained in, by its Contraction re-assumes its natural Form, and himself by the natural Propensity he has to break his Prison, conquer together the Obstacles which oppose his Passage, and nature him answer the Intentions of Nature in his Formation. That the longer Time appointed by that wise and careful Mother of all sublunary Things, cannot exceed nine Months; and if a Child comes sooner by a natural Labour, *i. e.* at seven or eight Months, he can live, because then he comes always a Creature perfect in all his Parts, though sooner than usual, because those Parts in their first Delineation having less Room, and having been drawn as in *Mi-*

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Perfection, and do not want so great a Number of *Touches* to fill up the *Dessein*. For, contrary to the Sentiment of those who consider Children of seven Months almost as abortive, we have seen some of them live to a great Age; I have known one in *Britanny* who lived till he was 84 Years old; and the late Elector of *Cologn*, *Joseph Clement* of *Bavaria*, it I have been rightly informed, was born at the seven Month.

Note, also, That several Women imagine to have been delivered at seven or eight Months, and others to have carried their Child ten Months, though they were all delivered at Nine. What most commonly deceives them is, that they believe to be with Child ever since the Time of the Retention of their Menfes, though they had them during the two first Months of their Pregnancy, and sometimes longer; and others are deceived likewise, because theirs were suppressed one or two Months before they conceived. It is also very easy to know that a Woman herself, though in good Order, cannot even be very sure by that Suppression, of the Time of Pregnancy. For, *v. gr.* if she cohabits with her Husband at the Time her Menfes are ready to flow, and conceives, she'll begin to reckon from the Time of their Suppression; in which there will be little or no Mistake: But if she conceives immediately after the Suppression of her Menfes (as it most commonly happens) and uses every Day for a whole Month of Coition, and at the End of that Time her Menfes don't return, then she'll think herself with Child; notwithstanding which she cannot be sure by that Sign, which Time has done the Business, and may be mistaken in her Reckoning of three Weeks, or a Month, more or less. Therefore there is no Dependance on that Indication, which can serve only for a simple Conjecture, unless the Woman had abstained from Coition, from the very Instant she imagines to have conceived.

As we have said, that Children are more or less likely to live, as they approach nearer the End of the ninth Month; we can easily judge that those of six Months, much less those of five, four, &c. cannot live long, because they are yet too weak to resist the Injuries of the Air, &c.

A great Contestation has often happened between Physicians, to know if a Child, born eleven or twelve Months after the Death of his Father, be legitimate, and consequently can inherit his Estate, or be frustrated of it, as a spurious Child. This difficult Question was often agitated among the *Romans* as well as among us; and there were then, and have been since very learned Physicians, and famous Jurisconsults, *Pro* and *Con*. And though it was a great Temerity in the Physicians to attempt to prescribe Laws to Nature, which receives none but from her divine Creator, I am of Opinion, that the Legitimacy of a Child born eleven or twelve Months after his supposed Father's Decease, is very dubious, if not entirely impossible; and that those who would defend it could very well be guilty of Fraud, by introducing spurious Heirs in a Family, who are considered as such by the *French* Jurisconsults, when born so long after the Husband's Decease.

If a full Term be necessary for a *natural Delivery*, the good Situation of the Child is no less requisite; for he must come into the World the Head foremost, and in a direct Line, having his Face turned downwards, *i. e.* towards the Posteriors of his Mother, his Arms along his Sides, and his Legs extended upwards. This Figure is the best, and most convenient, because after the Head, which is of all the Parts of the Child the most firm and strong, is passed, all the others come out easily, and in that Posture, it being impossible that any of the Articulation, or Joints of his Body should bow, they cannot stop his coming out. — But any other Part which presents itself foremost in a Delivery, renders it laborious and preternatural, in which Case there is sometimes a great Risk for the Mother or the Child, and sometimes for both, if they be not quickly and dexterously succoured.

Note, That those who have not a perfect Knowledge of all the Parts of a human Body, cannot conceive how it be possible, that a Child who is so big should pass through the Aperture of the Matrice which is so little; and imagine with *Gallien*, and several other Authors, that the Bones *Pubis* of the Women are at that Time separated from one another, to make Way for the Child; without which, they believe that it is impossible the Child should have enough Room to come out; and that, for the same Subject, Women already advanced in Years, suffer much more than others in their first Labour, because their Bones *Pubis* cannot be so easily separated, which often causes the Death of the Child in the Passage. Others pretend, that it is the Bones *Ilium*, which are parted from the *Os Sacrum* for the same Subject. And the one and the other say, that the Bones thus separated at the Time of their Delivery, have been by degrees disposed to it before, by the slimy Humidities which run from the neighbouring Parts of the Matrice, which soften then the Cartilage which join them another Time. But these two Opinions are equally contrary to Truth and Reason, because the Anatomy shews us, that those Bones are so well joined, that it is even very difficult to separate them with the *Scapelle*, particularly the Bones *Ilium*, from the *Os Sacrum*, and almost impossible in Women advanced in Years, without very great Violence. Therefore, if they ask how a Child can come out of the Matrice without that Separation? I'll answer, that if we take the Pains to examine narrowly the different Figure and Structure of these Bones, in the Skeleton of a Woman, and in that of a Man, we'll find that there is a much greater empty Space, and a much more considerable Distance from one of those Bones to the other in Women, than in Men; and that the smallest Woman has the Bones *Iscion*, more distant from one another than the biggest Man. They have likewise the *Os Sacrum* more outward, and the *Os Pubis* more flattened; which renders the Going out of that Capacity much larger, and sufficient to give Passage to the Child in the Delivery. They have besides the Bone *Ilium* much more bent outward; that in the Pregnancy the Matrice may have more Room to extend itself Sideways, and be easier supported.

Neither can the Bladder and Rectum, after they have voided the Excrements they contained, hinder the Matrice, which has been made membranous for the Purpose, from dilating itself sufficiently as it does, to give Passage to the Child in the Delivery, thro' that large empty Space, which suffices without a Separation of those Bones; for if that Separation should happen, the Woman could not stand up, as several do, immediately after they have been delivered, because they serve to support all the other Bones, both of the superior and inferior Part of the Body.

Note, also, That having sufficiently discovered what a Labour is, and all the Differences thereof; we must examine next the Signs, which commonly both precede and accompany a natural Labour or Delivery: Therefore,

The Signs which precede a natural Labour, and which happen a few Days before, are, that the Woman begins to feel some uncommon Pains in her Loins, and the Tumour of her Belly which was very high, falls down all on a sudden, which hinders her from walking so easily as she used to do, and causes her frequent Motions of making Water; there flows then from the Matrice certain slimy Humidities, designed by Nature to humect the Passage, and render it slippery, that the inward Orifice thereof may be easily dilated when wanted; which beginning at that Time to open by degrees, voids those Slime, proceeding from the Humidities transuding through the loose Texture of the Membranes of the Child, and acquire that slimy Consistence by the Heat of the Places it runs through.

The Signs which accompany a present Labour, i. e. indicate that a Woman is really in Labour, are that she feels great Pains towards the Region of the Reins and Loins, which coming and growing stronger by Intervals, are felt in the Bottom of her Belly. All her privy

Parts are tumified, because the Head of the Child when near the Passage, pushes forward the neighbouring Parts, which appear tumified likewise; and when a Vomiting happens, it is commonly a Sign that the Woman shall be soon delivered, because thereby the Pains grow more frequently greater and longer; short and small Pains, though frequent, rendering most commonly a Labour very tedious, and exhausting the Strength of a Woman. When the Humidities, voided at that Time through the Matrice, are tinged with Blood, it is an infallible Mark that the Woman will soon be delivered; and then if the Finger be introduced into the Neck of the Matrice, its inward Orifice will be found open, and the Mouth thereof; the Membranes in which the Child is contained, present themselves, which Membranes are strongly compressed, at every Pain the Woman feels, during which they are felt to resist, and appear to the Finger more or less hard, as the Pains are more or less strong. Afterwards the Pains growing continually stronger and stronger, the Membranes break by the strong Impulsion of the Waters, which are evacuated in an Instant; and then the Child is easily felt, since it presents itself at the Aperture of the inward Orifice of the Matrice.

Note, That when all those Signs, or Part of them, meet together, whether the Woman be at Term or not, one may be sure that she'll soon be delivered. She must not be put in Labour, before the Necessity thereof be known by those Signs; otherwise it would be tormenting the Mother and her Child in vain, and put them both in Danger of their Lives; for though the inward Orifice of the Matrice, be sometimes enough dilated, for the Introduction of the Finger into it, and the Head of the Child is even felt through the Membranes, and the Woman feels some Pains in the Abdomen, one must not always conclude hence, that she is then really in Labour; for though there be a great Appearance of it, the Thing notwithstanding is not entirely sure, unless those Pains be felt at the Bottom of the Belly, and the Waters to range themselves between the Head of the Child and the Membranes: Therefore that Circumstance must be carefully observed, to avoid Mistakes in the Prognostick. This necessary Caution is confirmed by the Example of two Midwives of *Paris*, who having been sent for by the Wife of a Merchant, told her that she was really in Labour, because having felt the inward Orifice of the Matrice, they found it open of an Inch Breadth; but as the Patient thought her Labour very tedious, she sent for a Man-midwife, who having found the Orifice in the same Situation, and learned from her, that for six Days successively she had had some Pains in her Belly, which notwithstanding were not at all felt downward, as the Pains of a true Labour should, and he feeling no Preparation of the Waters of the Child, he advised her to content herself only with the Use of some Glysters, and to keep her Bed; which having done, her Pains ceased, after which she went a whole Month longer, at the End whereof she was happily delivered of a Child alive; though it is certain, that if one had contributed ever so little, to put that Woman in Labour, she had been delivered at eight Months; which had proved perhaps very prejudicial both to the Mother, and to her Child by accelerating his Birth a whole Month.

Note, also, That a Woman has sometimes what we call false Pains, caused commonly by a windy Cholick, which Pains are neither fixed nor felt toward the Matrice; and are dissipated by applying hot Cloths on the Belly, and administering carminative Glysters, all which increase the Pains of a true Labour, instead of dissipating them.

Note again, That all this suffices to know a natural Labour; I'll speak afterwards in a pretty ample Manner of the laborious and difficult Labours; and of all the preternatural ones, by treating of every one of them in particular. Examining previously to it, all that is within the Child in the Matrice, during Gestation; and beginning by a Description of the Things which present themselves first to come out at its Orifice, when the Woman is on the Point of being deliver'd; which Things are

the *Membranes* and the *Waters*, in which the Child is contained.

As the *Membranes* of the *Fœtus*, are the Parts which are formed first, after the Conception, in order to preserve the Seed of the Man, and hinder the Diffipation of the Spirits it is impregnated with, whereby the Intention of Nature would be frustrated; they are likewise those, which together with the *Waters*, present themselves first at the Passage in the Time of the Delivery.

Note, That most Authors are so very obscure in the Description they give of those *Membranes*, that it is very difficult to conceive the Thing as it is by their Description. They do not so much as agree among themselves on their Number; for several of them admit three *Membranes*, as well for a Child, as for Beasts; viz. the *Chorion*, *Amnios*, and *Allantoïdes*; though it appears, by Inspection, that there are but two, which are so intimately joined, that it could be very well said, that there is but one Membrane, which can be separated in two.

The inward Part of that Membrane, or double Envelope, and if we will reckon two, the first Membrane which presents itself outward is called *Chorion* or *Horion*; because it contains and environs immediately the other, called *Amnios* because it is very thin. The Membrane *Chorion*, is a little rough and uneven throughout its outward Part, where may be observed a Quantity of capillary Vessels, which run around it, and likewise a great many small Threads with which it is tied on all Sides to the Matrice; but it is a little more smooth inside, and is joined on all Sides with the *Amnios*; so that they both appear but as one and the same Membrane. That *Chorion* recovers the Placenta, and is very adherent to it on its Face towards the Child, which is done by the interwaving of a great Number of Vessels. It comes, likewise, towards the Circumference of the Placenta, to fasten itself to the Matrice, in which Place it is a little thicker.

The *Amnios*, which is the second Membrane, is six Times thinner than the *Chorion*, it is very smooth on the Inside; but it is not justly so on that Side it is joined with the *Chorion*. That Membrane is so thin, that it is quite transparent, and no Vessels are seen in it; touching in no Manner the Placenta, though it recovers it, but lines only the Inside of the *Chorion*, from which it can be separated, if one goes softly to work, as I have often experienced it.

With regard to the pretended, or rather imaginary Membrane, called *Allantoïdes*, and which they say is like a Girdle, environing the Child in the Manner of a large Gut, from the Cartilage *Xiphoides*, to underneath the Flanks only, it is certain, that it is never observed in a human *Fœtus*.

Sometimes Children are born with those *Membranes* on their Head, which the *French* call *Né coiffé*, and which the most ignorant among all Nations, particularly old Women, consider as a Sign of a future Happiness; but it is a pure Superstition; since that proceeds from that those *Membranes* were so hard, that they could not be lacerated by the Impulsion of the *Waters*, and by the Efforts of the Woman in her Delivery; or from that the Passages being very large, and the Child very small, he came into the World without any Violence: For in difficult Labours, Children are never born with a Cawl, as they call it in *England*; because being much tormented and squeez'd in the Passage, those *Membranes* break and remain there, till the Placenta, to which they are fasten'd, be extracted from the Matrice.

Inside of the *Membranes* of the Child, disposed as above-mentioned, the *Waters* are contained, in the Middle whereof he swims, and is placed.

Note, That the Origin of those *Waters* will likewise appear very uncertain, if one consults the different Sentiments of Authors; for some of them will have it, that they proceed from the Urine voided from the Bladder through the *Ouraque*, founded on that no straiter, and more easy Way appears for that Evacuation; and say that it is easy to know, that it is the Urine, by the Colour and Taste. Though it be very certain, that such a Thing cannot be; because the *Ouraque*

is neither perforated in the *Fœtus*, nor comes out of his Navel. Because in that Part, where it is fasten'd to it, it is always nervous, and not unlike the Chord of a Violin, through which nothing can certainly pass, let it be ever so subtil.

Others, who believe likewise that those *Waters* proceed from the Urine, are of Opinion, that they are evacuated through the Penis, which is always open, and not through the *Ouraque*, which is never perforated. But I would ask all those Gentlemen, if it could be possible, that the Child, whose Parts are so tender, could be kept so long floating in Urine, without being excoriated thereby, and exposed besides to a great Number of other Accidents, which would hinder his Growth, render him of a cacochimous Constitution, and perhaps put his Life in Danger, when it has the same Effect upon it, even two or three Years after his Birth, if through Negligence or otherwise, he be left in his Urine for some short Space of Time.

For my Part, I am of Opinion, as I have already declared, that those *Waters* are generated from the vaporous Humidities, transuding and exhaling continually from the Body of the Child, and meeting his *Membranes*, which they cannot penetrate by Reason of their Density, are dissolved into Water.

Note also, That when there are several Children, they are never in the same Envelope, unless their Bodies be join'd, and adherent to one another, (which is very rare, and monstrous when it happens) but each of them has always his distinct Membrane and *Waters*.

The *Waters* thus gather'd in the *Membranes*, have several very considerable Uses. They serve to facilitate the Motion of the Child, by his swimming in them, and lest by his frequent Motions he should wound the Matrice, in striking against it, which would sometimes cause Abortion. They defend him, besides, against external Injuries, in eluding the Violence of the Blows which the Woman could receive on her Belly; and contribute much towards rendering the Extraction of the Child easy in the Delivery, because they render the Passage very slippery; and humecting the Orifice of the Matrice, makes it to dilate itself much better, when they come to flow, when the Child is ready to come into the World, or a little before; for otherwise the Delivery would be attended with more Difficulties, and the Mother more tormented.

Note, That from this Explication of the *Membranes*, and of the *Waters* of the *Fœtus*, I'll pass to the Research of the Parts by Means whereof the Child receives his Food in the Matrice; which Parts are the Placenta, and the umbilical Vessels.

The *PLACENTA* is a fleshy and spongy Mass, semiblabile, in some Measure, to the Substance of the Melt; for the greatest Part composed of an Infinity of Veins, Arteries, and lacteal Vessels.

The *Placenta* is formed of an Accumulation of the menstrual Blood of the Matrice. Its Figure is flat and round, of the Breadth of a Plate, and two Fingers Breadth thick towards the Middle, to which the umbilical Vessels are fasten'd; but it is a little less thick towards the Extremities of its whole Circumference. It is cover'd with the *Chorion* and *Amnios*, only on that Side towards the Child; and the other is joined and fasten'd to the Bottom of the inward Part of the Matrice. Its strongest fastening with it, (which is in its Circumference) is made by Means of the *Chorion*, which adheres so strongly to the *Placenta*, by the Interwaving of an Infinity of Vessels which appear very big in its Surface, that it cannot be separated from it without Laceration of its Substance. If the *Placenta* be consider'd on the Side it is joined with the Matrice, the whole Face on that Side will be seen as intersected of several Lines, not much unlike those observed on the Surface of an Ox's Kidney. There appear in it, likewise, several small Orifices, through which the Blood which transudes through the porous Substance of the Matrice distills into that fleshy Substance.

When there are two Children in the Matrice, and even where there are three, if they be true Twins, *i. e.* generated of one and the same Coition, they have commonly

monly but the same *Placenta* with only as many Strings terminated to it, as there are Children; which notwithstanding, are entirely separated from one another by their particular Membranes, in which each Child is contain'd with his Waters a-part; unless they have, as heretofore observed, their Bodies joined and adherent to one another; in which Case Twins of that Nature, who, therefore are monstrous, have likewise the same Waters, and the same common Membranes. But if there be a Superfetation, there will be as many *Placenta's* as there are Children: And in a Superfetation (if there was ever such a Thing) happens but very seldom, few Women are seen to have several separated After-Births, when they are delivered of several Children. But tho' a single After-Birth be oftener common to several Children, it has been observ'd, that the Vessels of the Navel-string of each Child, both the Vein and Arteries, distributed or ramified throughout the whole Substance of that common After-Birth, are always entirely separated from one another; so that the Vessels which serve to feed one Child, have no Communication by Anastomosis, nor otherwise, with those destined to feed the other Children. Which is the Cause that each Child having his Principle of Food and Life, separately from one another, and being lodg'd in different Membranes and Waters, one of those Children can sometimes be dead in the Womb, while the other remains alive; provided the dead Child does not remain long enough in the Matrice to be corrupted, for the Corruption would soon infect the whole Capacity of the Matrice, and being communicated thereby to the other Child, cause his Death, likewise; besides the Accidents the Mother would be exposed to from that Corruption.

Note, That when a Woman with Child has some Indisposition of the whole Habitude, let it be ever so little, there is almost always some Mark or Impression of it, either in the Colour or Substance of the After-Birth she voids in her Delivery; because that Part being of a very soft and spongy Substance, is easily drenched with the bad Humours of the Body, which used to discharge themselves through the Matrice. Its natural Colour should be of a fine Red, when the Woman is healthy; and its Substance sound and equally soft.

From the Middle of the After-Birth arises a String, composed of several Vessels join'd together. Some Authors reckon four of those Vessels, *viz.* two Veins, and two Arteries; and others five, adding the Ouraque to it: But it is very certain, that there are but three Vessels to the human Fœtus, *viz.* a Vein, and two Arteries. The Vein having shot in the Placenta an Infinity of small Branches semblable to the Roots of Trees, runs by a single Channel, all along the Navel-String to the Navel of the Child, through which it passes, to terminate at last in the Middle of the Scissure, which is in the inferior Part of the Liver; and the two Arteries issuing from the same Placenta, by a great Number of semblable Roots, run by two Channels along the same String, piercing likewise the Navel of the Child, to terminate in his iliac Arteries, and sometimes in the Hypogastricks.—The Vein is much bigger than the Arteries; its Cavity is large enough to contain a Goose's Quill, and that of the Arteries, less by half.—The Arteries make several unequal Windings along their Way; but the Vein runs more directly throughout all its Progress.

Those three Vessels which compose the String, are enveloped with a pretty strong and thick Membrane, proceeding from the *Chorion*, and invested with a Production of the *Amnios*, which can be easily separated from it. The first Membrane serve them not only as a Scabbard in which they are all three lodg'd, but by its Foldings, separate them likewise from one another. When the Vessels of that String are full of Blood, it is about the Bigness of a Finger, and commonly half a Yard long, *Paris Measure*, and sometimes three Quarters of a Yard. It must have that Length, that the Child may have a free Motion in the Matrice, and to come out at the Time of the Delivery, without making any Violence to the After-Birth to which it is fasten'd, as it sometimes happens, when that String is too short; or its Length much diminished, by its making several Turns round the Neck of the Child; which renders a

Labour very laborious, and dangerous; because the Child being thus stopped, and as bridled by that String, remains suspended, and cannot easily descend to the Passage, nor be forced down by the Pains of the Woman, without pulling hard, at the same Time, on the After-Birth, and separating it from the Matrice, which is always followed by a dangerous Loss of Blood, if that Separation precedes the Birth of the Child.

Note, That there are commonly seen in the Navel-String several Inequalities like Knots, which proceed only from the Turnings and Windings of its Vessels, which being varicous and fuller of Blood in one Place than in another, produce those Eminences.—Some Midwives believe superstitiously, or would make one believe, that the Number of those pretended Knots is proportioned to that of the Children the Woman is to have afterwards; which is without Reason; because she who is deliver'd at forty-five Years of Age, or for the last Time, has as many Knots in the Navel-String of her Child, as she who is deliver'd at fifteen of her first Child, and who may have, perhaps, twelve more.—They say, besides, that if the first Knot towards the After-Birth be red, the first Child the Woman is to have afterwards will be a Boy; and if white it will be a Girl: But this Opinion is as groundless and unreasonable as the other; for those Knots appear red, or rather of a dark blue, only according as the Vessels are more or less full of Blood, which Colour is much more manifest, as the Vessels are superficial.

As soon as the Child is born, those Vessels which are bigger in the Fœtus, than in a Man, grow dry, and that Part thereof which is out, falls five or six Days afterwards.

Note, That having thus far observed all that is found with the Child in the Matrice; we must examine next his different *natural Situations in it, according to the different Times of the Pregnancy*; whereby a true Knowledge may be acquir'd of those which are *preter-natural*.

All Children, whether Males or Females, are commonly situated in the Middle of the Matrice; for tho' the Belly of a Woman with Child be sometimes higher on one Side than on the other, that proceeds only from the Globe of the Matrice inclining more on one Side than on the other; and that sidewise Situation must be understood only with Regard to the Belly of the Mother, and not to the Matrice, in the Middle whereof the Child is always placed, because there is but one single Cavity in a Woman's Matrice, only marked lengthwise by a small Line; and not by two, or several Separations, as is seen in that of other Animals.

Note, That some Authors pretend, that those two imaginary Cavities, are the Occasion of Women bearing, sometimes two Children, and sometimes more; and that the Males are generated on the right Side, and Females on the left; though there be no certain Rule for it; some Women carrying the Males on the right Side, and others the Females on the Right; and when there are two Children, they are sometimes both of the same Sex, other Times not, and are indifferently situated on the right or the left Side. Thus far of the *general Situation of the Child in the Matrice*.

As to the *particular Situation* of the Child, which is considered by his different Postures and Figures, it is different according to the different Times of the Pregnancy. For in the first Months, the Embryo is always found of a round Figure, a little oblique, having his Back-bone moderately bowed inward, the Thighs folded, and a little rais'd, to which the Legs are joined; so that the Heels approach the Buttocks, and the Extremities of the Feet are turned inwards; his Arms are bowed, and his Hands near his Knees, towards which his Head inclines, leaning forwards in such a Manner, that his Chin touches his Breast. He has then his Back-bone turn'd towards that of his Mother, his Head upwards, his Face forwards, and his Feet downwards, and on Proportion as he grows, he extends his Members, which he had exactly folded during the first Months. We

We must not imagine; notwithstanding; that the Child is always precisely in the Posture above described, since he changes sometimes that of his Arms and Legs, in bending or extending them more or less, throwing them from one Side to the other; according as he is excited to it, by several different Causes; as Women with Child can witness, who feel him move his Parts in a different Manner, after which he generally re-assumes his former Situation above described; in which he reposes himself easily, because all the Parts of his Body have then, a Figure between an extream Extension, and an exact Flexion, which Figure is the most natural, and most indolent they can have.

The Child keeps commonly that first Situation, till the seventh or eighth Month, when his Head being grown very big, he tumbles downwards by its own Weight, against the inward Orifice of the Matrice, his Feet being then upwards, and his Face turn'd towards the Buttocks of the Mother; and when it is turned contrary-wise; that is not natural; for besides that, the Face of the Child coming outward, would be much bruised by the Bones of the Woman; the Labour-Pains could not push the Child so easily out of the Matrice, as they do when he has his Body and Face downwards; in which Case the Matrice, as well as the Muscles of the Abdomen of the Mother, contracting themselves at the Time of the Pains, on the Back of the Child, who resists the Pain by that Situation, his Head is much easier forced through the Passage.

Note, That when the Child has changed that Situation by that tumbling, he being not yet used to this last, sometimes moves and stirs so much, that the Woman, by the Pains she feels then, believes herself in Labour; though she goes afterwards her full Time.

Note also, That if one reflects seriously on that Circumstance, he'll know, that this is the first pretended Tentative, the Child (in some Authors Opinion) makes to come out at seven Months; and he being incapable to do it, remain'd in that Situation till the ninth; unless he reiterates it at the eighth, and if he should chance to come into the World then, could not live long; because he could not undergo two such great Efforts so near one another. But that Opinion is false; for if the Child turns thus his Head downwards, it is but by a natural Disposition of the Weight of the superior Parts of his Body; and if he moves himself much at that Time, and immediately after; it is not that he wants yet to come out; but because he is very uneasy in that new Situation, to which he is not used yet.

When there are several Children, they must keep the same Figure, to be natural, as if there was but one. Though by their different Motions, some of them take most commonly a bad Situation in the Time of the Delivery, or even before; which is the Cause that often one comes his Head foremost, and the other his Feet, or in a still worse Situation; and sometimes both present themselves in a bad Posture.

Whatever may be the Situation of the Child in the Womb of the Mother, and whatever may be the Figure he presents himself in, it is always preter-natural, if it be not in the Manner above described; and the natural Situation of the Child is so necessary to an easy and happy Delivery, that the preternatural ones are the Cause of most of the hard and difficult Labours.

Note, That when a Woman with Child is happily gone her full Time, and falls in Labour, she must be succoured in the following Manner.

When by the Signs heretofore mentioned, which precede and accompany the Labour, one is convinced, that a Woman is ready to lay in, the principal thereof are, that she feels strong Pains in her Belly, which push the Child downwards towards the Matrice, and that in touching it with the Finger, its Orifice is found dilated, and the Water is forming; every Thing requisite to assist the Woman in her Labour, must be prepared. Some are of Opinion, that previously to any Thing else, a Clyster should be administer'd to her, to procure the Evacuation of the Excrements, whereby the Intestine *Rectum*,

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being emptied, there is more Space for the Dilatation of the Passage of the Child; though, in my Opinion, this Precaution, though very good, is not necessary; unless the Woman be naturally constipated, and has been several Days without going to stool; for it might happen that the Child would be ready to come into the World, at the very Time the Clyster operates, which perhaps would cause some Trouble to the Midwife, and hinder her from taking all the Advantage she otherwise could, of a favourable Opportunity of delivering the Woman at that Time; besides that, there is an Infinity of Women who have a natural Repugnance for Clysters; and nothing should be done then, contrary to their Inclination, since fretting weakens them, and hinders them from minding their Pains as they should. Therefore to proceed with a greater Facility, in that Case, less fatiguing for the Woman in Labour; and less troublesome for the Midwife, she is to begin by making the Patient walk in her Apartment, if her Strength permits, giving her from Time to Time, especially immediately after she has took a Pain, two or three Spoonfulls of white Wine, burnt with Cinnamon, but never any spirituous Liquor, unless it be when the Labour is tedious, two Spoonfulls of Cinnamon-Water, though I would prefer to it a Drachm of Confection Alkermes; recommending her above all Things to reap all the Fruit she can of her Pains, by stopping her Breath, and forcing strongly downwards, while she feels them.

The Midwife must feel from Time to Time the inward Orifice of the Matrice, to discover if the Waters are ready to break, and if the Delivery will soon follow; keeping all the while near the Patient, to observe narrowly her Motions, and Complaints; for thereby one may judge well enough if the Work goes forward, without being obliged to feel the Woman often downwards.

Note, That there are some Women, the inward Orifice of whose Matrice cannot be felt at the Beginning of their Labour. Because they have that Orifice situated very high towards the *Rectum*; which is the Cause why none can then precisely foretel the Time of the Delivery; and even can be deceived, by not believing her in Labour, if he had not regard to the other Signs above-mention'd. Notwithstanding which, if the Child be well turn'd, and the Woman be really in Labour, the Head of the Child is felt, through the Substance of the Matrice, to come down by Degrees, and to resist strongly enough, to feeling, when the Woman takes her Pains.

The Patient may lie down by Intervals, to recruit her exhausted Spirits; but she must take Care not to lie long; though when a Woman begins to be in Labour, and her Pains are small and tedious, without any Preparation of the Water, she must not be fatigued by making her set up too long, since thereby she often exhausts her Strength at the Beginning of her Labour, after which she is so weak, that she cannot take the Advantage she could of her last and strongest Pains: Therefore it is much better to make those Sort of Women lie down, and keep them very warm in their Bed, to ripen their Labour, till the Waters begin to form themselves as it should be; after which she may get up, if the Midwife judge proper, to increase by that Situation the strong Pains which come at that Time.

When the Waters of the Child are well prepared and formed, the Midwife must let them break of themselves, without attempting to do it; for under Pretence of forwarding her Work by thus lacerating the Membranes, she on the contrary retards it, by that accelerated Evacuation of the Waters, which must serve to make him slide with more Facility, and leaves him dry; which afterwards hinders the Pains from forcing him out so easily as they would have done.

When the Waters are broken of themselves, the Midwife will easily touch the Child by the Part which presents itself first, and be sure if he comes naturally, *i. e.* the Head foremost, which she'll feel hard, big, round, and even; but if it be another Part, she'll feel something uneven, and hard, or soft, more or less according to the Part which presents itself.

Immediately after she must make Haste to put the Woman

Woman to Bed, if she is not there already, to help her in her Delivery, which commonly happens soon after, if it be natural. But if she finds that the Child presents itself in a Situation quite different from the natural, and knows herself not capable to perform the Operation, so as to save the Mother and the Child, she is obliged in Conscience to send as soon as possible for a Man-midwife, without waiting to the last Extremity, as some of them do.

Note, That certain Midwives are so much afraid that the Surgeons should take their Practice from them, or to appear ignorant before them, that they chuse to run all Risks, rather than send for them in a desperate Case.—Others are so presumptuous, that they believe themselves capable of undertaking any Thing: And others, who (though they have not those Vices) for Want of Knowledge and Experience in their Art, hope often in vain, that the Child will re-assume in Time a good Situation, and that the Accidents will cease. Some of them have the Malice to frighten so much the poor Woman in Labour, with the Idea of a Man-midwife, whom they represent as a Butcher and Murderer, that she rather chuses to die in Labour than to send for one; but those infamous Midwives do not consider, that if the human Laws take no Notice of the atrocious Crime they are guilty of, if the Woman dies without that Succour, an all-seeing God will call them to an Account, and punish them severely for it. I must confess, that I pity with all my Heart, the deplorable Condition of most of the *English* Women, who are but too often attended with pretended Midwives, who know nothing of that dangerous Profession; and by some Men-midwives likewise, who are very little more learned, unless we make their Capacity to consist in an Equipage, as the Women themselves do, and which, I am convinced by Experience, is the principal Merit of some of them; though I know likewise, that there are some very experienced ones in *London*, who are not perhaps the most employed, though I have not the Pleasure of being acquainted with them; though I know that *Sir Richard Manningham* has performed several very good Operations in that Art.

Therefore when the Waters are broken (to use the common Expression, and be better understood) and the Midwife finds that the Child does not come out well, she'll bid the Patient to make no more Efforts, lest thereby the Child being too much engaged in the Passage, the Surgeon could not turn him but with great Difficulty, whom she must send for as soon as possible.

Note, That having instructed the Midwife what she is to do while the Woman is in Labour; she must learn next how to help and ease her in a natural Delivery, when there is one or several Children.

Though it be the Practice of several Midwives and Men-midwives, to wait till after the Waters are broken of themselves in a natural Labour, before they put the Woman in the Posture they would have her, or she chuses to be delivered; I am of Opinion, that it is rather too late, and that it should be done as soon as the Midwife perceives the Pains to grow stronger and stronger, and more frequent, since it is a sure Sign that the Child will soon be born.

Note, That Women in Labour are not all delivered in the same Posture; for some will be delivered on their Knees, some standing, others laying on Matresses, laid on the Floor in the Middle of the Room; and others, which is the best and safest Manner, in their own Bed, which should be made then of several Matresses, over which are put Sheets folded into several Doubles, to hinder the *Lockia* from hurting the Patient, which must be laid on her Back on that Bed, so that she be neither entirely sitting, nor entirely lying; then she must open her Legs, and approach a little her Heels near her Buttocks, under which there must be a Pillow, that the Coccyte may give Way backwards, her Feet resting on something which can resist, and she holding something with her Hand, that she may force stronger downwards: Her Belly must not be pressed with the Hands, as some Midwives do, because it is to be feared that such Compressions

would make some Contusions to the Matrice, which is extremely tender at that Time.

The Woman in Labour being placed in that Posture, or in any other she thinks more easy for her, and the Waters broken, the Man-midwife or Midwife, shall introduce a Finger into the inward Orifice of the Matrice, to know if it be the Head of the Child which presents itself; then having anointed his Hand with Pomatum or Fresh Butter, or without anointing it if he pleases, he'll put, at the Time of the Pains, the Ends of his Fingers into the Orifice of the Matrice to dilate it, in parting them from one another. When the Head of the Child shall begin to appear, the Midwife must push up the Sides of the Matrice towards the back Part of the Head of the Child, who when advanced forward as far as to the Ears, must be taken with both Hands on the two Sides, and at the first great Pain drawn, not in a direct Line, but wavering, and his Face downwards, observing carefully, that the Navel-string may not be turned round the Child, for it would be broke, and one would pull too hard on the Matrice. When the Shoulders shall appear, the Midwife must slide her Fingers under the Arms, and draw the Child, who must be put on his Side, his Face towards her, lest the Blood and Waters which flow immediately, should suffocate him, by falling into his Mouth and Nose.

The next Thing a Man-midwife or Midwife must do, is to see if there be no other Child left in the Matrice, for it happens often, that there are two, and sometimes more; which is easily discovered by that the Labour's Pains continue after the Birth of the Child, and the Woman's Belly is still extremely big; but to be better convinced of it, if she introduces her Hand into the Entrance of the Matrice, she'll feel other Waters in other Membranes, with a Child presenting himself at the Passage.

In that Case the Woman must not be delivered of the After-birth till after she has been delivered of her other Children, because Twins having most commonly but the same Placenta for all, though there be several Navel-strings with as many Separations of the Membranes, if it was extracted after the Birth of the first Child, the other Children would be in some Danger of their Lives, because that Part is absolutely necessary to them while they are in the Matrice; and that Extraction would cause a great Loss of Blood to the Mother. Therefore the Navel-string of the first Child must be cut off, after it has been tied with a strong Thread four Times double, as I'll say more precisely hereafter, fastening the End thereof to the Thigh of the Woman, not for Fear it should re-enter the Matrice, but to hinder it from discommoding the Woman, in hanging between her Legs, making likewise another Ligature at its Extremity, to hinder the Evacuation of the Blood; After which, having given that first born Child to another Person, the Midwife shall make no Difficulty to break immediately the Membranes of the other Child, for the Evacuation of the Waters (in case they are not broken of themselves) because the first having made the Passage, the Birth of the second is thereby accelerated, of whom she must be delivered, observing all the same Circumstances prescribed for the first; which done, she must be delivered of the After-birth.

A Woman must be delivered of the After-birth, as soon as the Child is out of the Matrice, and even before the Navel-string is tied and cut; for Fear the Matrice, which as soon as delivered of its Burthen, contracts itself as fast as possible to re-assume its natural Situation, should close itself, and thereby hinders (as it happens but too often) the Extraction of the After-birth, which corrupting soon in the Matrice, if it be left in it, either entire, or in Part, causes very dangerous Symptoms to the Mother, and sometimes her Death; though several ignorant Midwives have but little Regard to the After-birth, and are sometimes a whole Quarter of an Hour before they make any Attempt to extract it; so that the Passage being by that Time much contracted, they put the Woman, already almost entirely spent, in a new Labour, sometimes more painful and laborious than the first; and at last, bring perhaps but Part of the After-birth.

To deliver the Woman of the After-birth, the Midwife must make two Turns round her Left-Hand with the Navel-string, or with the same Hand lay hold of it with a dry Cloth, lest it should slip between her Fingers, and with the Right take it only, above the Left, near the Pudendum, drawing likewise very softly with that Hand, and leaning the Ends of two Fingers joined together, or only that of the Index of the same Right-Hand, extended and carried to the Entrance of the Vagina, on that Navel-string, according to its Length; observing always, to render the Thing more easy, to draw, and lean particularly towards the Side where the After-birth is less adherent, and not take the Navel-string covered over with the Membranes of the Child, which hanging sometimes at the Outside, after the Birth of the Child, which hinders one from holding so fast the Navel-string, as when it is held alone, because those Membranes render it slippery; which commonly happens in Deliveries, where the Membranes of the Waters come out very far at the Passage before they break.

Particular Care must be taken, not to draw and use the Navel-string with too much Violence, for fear it happening to break very near the Placenta, one should be obliged to carry afterwards the Hand into the Matrice, to extract it; or that the Matrice, to which that After-Birth is sometimes very adherent, should be drawn out along with it, as it happens sometimes; and likewise, that being separated from it with too much Violence, it should happen, at the same Time, an excessive Loss of Blood, which would be of a very dangerous Consequence.

To facilitate the Expulsion of the After-birth, the Woman must blow hard into one of her Hand shut, as she would do into a Bottle, to discover if it be flawed, or blow her Nose hard, or thrust a Finger into her Mouth, as if she would excite herself to vomit; or stopping her Breath, force downwards, as if she would go to Stool; since all these different Motions and Agitations produce the same Effect.

If notwithstanding all these Efforts, the Woman cannot be delivered of the After-birth, the Nurse or some other skilful Woman, must pass softly her Hand over the Belly of the Patient, drawing it downwards in manner of Friction, and if all this will not do, the Hand must be introduced at last into the Matrice, to extract it in the Manner I'll shew by and by.

After the Extraction of the After-birth, it must be carefully examined to discover whether it be whole or not, and great Care taken, that no Part thereof, or of the Membranes, or even Clods of Blood should remain in the Matrice, which must also be extracted, lest they should cause afterwards very excessive Pains to the laying-in Woman; and if she has complained, during Gestation, of some Pain, Hardness, or extraordinary Weight in her Belly, greater in one particular Place than in another, one must examine, if there be not remaining in the Matrice some foreign Bodies, in the Manner of a Mole or false Conception, that it may be extracted in Time.

Note, That when the Woman has two Children she must be delivered of the After-birth in the same Manner as if she had but one, observing only, for the Reasons heretofore mentioned, not to do it before the two Children are born, after which it may be done without any Danger; shaking and drawing softly, sometimes one of the Navel-strings, sometimes the other, and sometimes both together; and thus alternately till all come out, observing however, in drawing those Navel-strings, to make always that of the Child who is born first, to precede a little the other; that thereby the After-birth to which it is fastned, be easier drawn out of the Matrice.

Note, also, That when the Child comes naturally, the Woman is delivered with very little Help; but there are several other Things to do, when the Delivery is against Nature, in which the Dexterity and Prudence of an experienced Man midwife is indispensably requisite.

As the After-birth is left in the Matrice, because the Midwife wanting to extract it breaks the Navel-

string, either by pulling too hard upon it, or because it is sometimes so weak, or so corrupted when the Child is dead, that though it be ever so gently handled, it parts from the After-birth, which remains afterwards in the Matrice, or because it is too adherent to it, or that not having been drawn soon after the Birth of the Child, the Matrice is so contracted, that there is no Room for it to come out; unless the Part be dilated, which cannot be done without great Difficulty; for it remains dry when the natural Lochia, which commonly follow the Delivery, have been evacuated for some Time.

Note, That the After-births which are very thick, and as it were, Scyrrhous, are much more difficult to be extracted from the Matrice, than those whose Substance is soft, and moderately thick, which rendering them more pliable than the others, facilitate their running through the Passage, when one pulls on the Navel-string, before they be separated from their Mass; and it has been observed that the Navel-strings which are frizeled, though ever so big, are more subject to break in delivering the Woman than the others. There are sometimes likewise, After-births so monstrously big, that it is impossible to extract them, though the Navel-string holds fast to them, without fetching them with the Hand, myself have measured one twelve Inches broad, very adherent besides to the Matrice, in a very tall Woman, and which it had been impossible to draw out, if I had not fetch'd it immediately after the Birth of the Child.

In those Occasions, the Man-midwife having well anointed his Hand with Oil or Pomatum, and pared his Nails, must introduce it into the Matrice, to separate the After-birth from it as gently as possible, and draw it out together with the Clods of Blood, which might be along with it. When the Navel-string is not broken, it serves to guide the Hand to the Place where the After-birth is situated; but when it is broke, the Operator must take a particular Care not to mistake one Part for the other, and draw the Matrice; which will be easily avoided, if one has learned, that having introduced his Hand into the Matrice, he'll soon discover the Difference between it and the After-birth, in that the After-birth is full of little Unequalities, produced by the Roots of the umbilical Vessels on that Side they terminate in it; besides, the Vessels ramified throughout its whole Substance are easily felt, which Substance is much more soft than that of the Matrice. But if the After-birth be entirely separated from the Matrice, it will not be difficult to draw it out; and if it be adherent, having discover'd on what Side it is less, one must begin on that Side to separate it gently, by thrusting some Fingers between it and the Matrice; for it is much easier separated, when drawn by that Part which is less adherent, than if it was attempted by that which is closer to the Matrice; continuing thus, gently, till it be entirely separated; after which it must be drawn out, taking a special Care not to go too roughly to work; leaving rather, if it cannot be done otherwise, a small Portion of the After-birth behind, than to scratch the least Part of the Substance of the Matrice, lest Flooding should ensue, or an Inflammation or Gangrene, which would prove mortal. — But it is not so often the Adherence of the After-birth to the Matrice, which retains it inside, as it is the Contraction of its inward Orifice; for that Orifice being not dilated in Proportion to the Bigness of the After-birth, stops it, and is the Cause that the Navel-string breaks.

When a Man midwife is sent for, if the Matrice be not open wide enough to introduce his Hand into it, he must anoint the Parts of the Woman with Pomatum, that he may dilate them with less Difficulty; after which he'll introduce it little by little, without using any Violence, or only two or three of his Fingers, with which he'll lay hold of a Portion of the After-birth, which presents itself almost always at the inward Orifice, and draw gently, a little sideways, and wavering, endeavouring always, without parting with his first Hold, to catch another further; so that in the End there may be part of the Membranes of the After-birth; for if he was to draw only its spongy Substance, it would break in Pieces, because

cause of its extreme Softness; and at the same Time, the Woman, on her Side, will contribute much to that Dilatation, as likewise to the Expulsion of the After-birth, if she forces hard downwards, by stopping her Breath and exciting herself to vomit, &c.

But if notwithstanding all these Endeavours, the After-birth cannot be extracted, and if the Matrice, because of its Inflammation, cannot be dilated enough to go and fetch it without an extreme Violence, or if it be so adherent that it cannot be separated from it; then to avoid a greater Evil, most Physicians and Men-midwives are of Opinion, that the Operation should be left to Nature, helping it by means of Remedies which can bring the After-birth to Supuration.

Note, That the Remedies used in those Cases are Injections into the Matrice made with a Decoction of Mallows, Marshmallows, Parietary, and Lin-seed, to which must be added Oil of Sweet Almonds, or of white Lillies; administering besides to the Patient pretty strong Glysters, that the Efforts she'll make to go to Stool, may accelerate the Evacuation of the After-birth, by which Means several evacuate it with the Stools, without being sensible of it.

Note also, That at the same Time to avoid a Fever or any other dangerous Accidents, she may be let Blood in the Arm or in the Foot, according as it will be judged proper or necessary; strengthening her the while with good Cardiacks, good Broth, made with Veal and Chickens, and now and then a Glass of very good Wine, mixed with Water, provided she has no Fever.

Note again, That the dangerous Accident of the After-Birth being left in the Matrice, proceeds but too often from the Ignorance of the Midwives, or their Want of Experience; leaving often the Woman in a worse Condition than she had been if they had never touch'd her: For to my certain Knowledge, most of them boast of being capable to do Man's Work, as they call it. For some of them, when they leave Part of the After-Birth behind, and consequently cannot shew it whole to the Assistants, as they should do, have the Impudence to tell them, that there is not the least Danger for the Woman, and what is left will come out of itself; though all the while the poor Patient runs the Risk of her Life.—What is left behind, in those Occasions, can be extracted by introducing, if possible, the Index into the inward Orifice of the Matrice, and dilating it by Degrees, so as to introduce another Finger, wherewith the Pieces of After-Birth can be seized, as a Lobster would seize something with his Claws.

It often happens, that in the Abortions of the first Months, which are always attended with some Loss of Blood, the Child being very little, is expelled from the Matrice, with some Membranes stuffed with Clods of Blood, at a Time when perhaps a Midwife is not near the Patient to help her; and that the Persons who know nothing of the Matter, do not examine precisely if the After-Birth be among the Lochia; which is then left behind, because the Matrice closes immediately after the Child is come out; and which the Midwife herself, when arrived, does not always mind; which Negligence renders the Thing very difficult; and the Woman subject to very dangerous Accidents; principally to Losses of Blood, which do not cease till the foreign Body left in the Matrice be extracted.

Note, That it is always better to extract the After-Birth with the Hand, if it can be done without Violence, than to excite the Expulsion thereof with Remedies taken inwardly; for all the Drugs which can produce that Effect, being either purgative or diuretick, and extremely hot, contribute much to cause a Fever to the Patient, and excites her to make needless Efforts, which occasion Losses of Blood, or increase that she may have already; an immoderate Looseness, Inflammations, Ruptures, or Fallings of the Matrice, which are always much more prejudicial to the Woman, than could be the little Violence done in extracting the After-Birth with the Hand.—But as it hap-

pens commonly, that in Abortions made in the first Months, the inward Orifice of the Matrice does not happen, but in Proportion of the Smallness and Softness of the Body of the Child expelled, there is often no more Room but for the Introduction of a single Finger; in that Case, it is best, if there be no imminent Accident, to commit entirely the Expulsion of those little After-Births to Nature, in assisting it with the Injections and other Remedies above described, than to use any great Violence to extract them with the Hand.

Note also, That most commonly, in Abortions which have been preceded for some Time with strong Pains, the After-Birth is easily enough expelled from the Matrice, or extracted together with the Child; but when the Abortion happens almost all on a sudden, without any previous Pains which could have caused its Separation from the Matrice, then it remains often in it, and cannot be expelled, or drawn without Difficulty.

Note again, That the aforesaid Instructions are sufficient for a *natural Delivery*, therefore I'll pass to those relating to each of the different *preternatural ones*.

There are three Sorts of *preternatural Deliveries*, viz. the *laborious*, the *difficult*, and that entirely against Nature.

A *laborious Delivery*, is that whereby the Mother and her Child (though he comes into the World in a natural Situation) suffer much.—The *difficult* is no otherwise different from the *laborious*, than by its being attended with some Accidents which retard it, and render it difficult.

But the *Delivery against Nature*, is that which by reason of the Situation of the Child, can never be done without the Assistance of the Operation of the Hand.

In the *laborious Delivery*, and in the *difficult*, Nature works always a little, but in that which is entirely against Nature, all its Efforts are vain and of no Effect; and none but an experienced Man-midwife is capable to bring the Child into the World.

The Difficulties a Delivery is attended with, happen either from the Part of the Mother, or from the Child, and often from both.

From the *Part of the Mother*, because of the bad Disposition of her whole Body, or of some Part thereof, or by reason of some strong Passion.

By reason of the *bad Disposition of her whole Body*; as if she was too young, and had the Passage too narrow, or too old, being pregnant of her first Child; because then her Parts which are very dry and hard, cannot be so easily dilated; as it happens likewise to those who are too lean; besides which, those old ones have the Articulation of the Coccyx too firm, which is the Cause that it does not give Way so easily, when the Child forces his Passage into the World, as it does in young Women, who have yet that Part cartilaginous. She who is short and thick, or ill shaped, as crooked, has not her Breath strong enough, to make her Pains worth any Thing, and push downwards; as likewise that she who is weak, either naturally or by Accident; and the Lame have sometimes the Bones of the Passage ill conformed. Those of a tender Constitution or fearful, have still much more Pain than others, because that hinders them to force themselves; as likewise those whose Pains are very short, small, and do not come but by long Intervals; or have none at all. Violent Cholicks, prove also very prejudicial to a Delivery, because they hinder the true Pains. All violent Maladies, as a violent Fever, a Pleurisy, an excessive Flux of Blood, frequent Convulsions, Dysentery, and the like, render a Delivery laborious. A Retention of the Excrements, cause likewise a great Difficulty to a Woman in Labour; as when there is a Stone in the Bladder, or it is extremely full of Urine with a Retention thereof; or when the intestine Rectum is full of hardened Matters; when the Woman has large Hemorrhoids, and very painful. The violent Passions can also much contribute towards rendering a Labour difficult; as Fear, Melancholy, Sorrow, &c. and when the Woman who miscarries has as much Pain as that who goes her full Time; as likewise that who is wounded, though she be very near her Time.

As to the Difficulties occasioned by the Matrice alone, they proceed either from that it is not well situated, or from its bad Conformation, having its Neck too narrow, too hard and callous, either naturally, or by some unforeseen Accident, as by some Tumour, Ulcer, or superfluous Flesh, either in its Neck, or its inward Orifice, or because of some hard Cicatrice, proceeding from some preceding violent Delivery.

The Things contained in the Matrice with the Child render likewise a Delivery difficult; as if its Membranes be so hard that they cannot break, which hinders him, sometimes, from advancing to the Passage; or so weak, that the Waters break too soon; for they being evacuated before the Time, he remains dry in the Matrice; if there be a Mole; if the After-birth comes out first, which causes an excessive Flooding to the Mother, and infallibly the Death of the Child, unless he be out of the Matrice, or brought immediately into the World.

As to the Difficulties happening from the Part of the Child, it is when the Head is too big; when his Abdomen is hydropical; when he is monstrous, having two Heads, or being joined to another Child, or with some Mole, or any other foreign Body; when he is dead, or so weak, that he can by no Means contribute to his Birth; and when he presents himself in a bad Situation; as likewise when there are two Children or more, because the Situation of those Children, who are then in each Side of the Belly, hinders the Labour-Pains from answering in a direct Line downwards.

Besides the general Difficulties abovementioned, it has been observed often, that the Women-Labour is rendered more tedious, and very laborious by the three particular Causes following; viz. either by the excessive Bulk of the Child, which is the Cause that he remains long before he can be forced into the Passage; which does not happen but after the great Pains have lasted a long Time; or because the Child has his Neck, or some of his Members embarrassed in the Navel-String, whereby the Pains which should force downwards fly back towards the Reins; for then the Pains cannot push the Child downwards, without the Navel-String, then much shortened (especially if the Neck be environed with it) pulling hard on the After-birth: And the third of those particular Causes is when the Child comes his Face upwards; because at the Time of the Pains of the Mother, her Belly, by contracting itself, compresses the Matrice on the Inequalities of the Arms and Legs of the Child, which are outward; whereby the Motion of the Pain being intercepted, cannot so easily force the Child out, as if the Compression was made on the Back of the Child, as it happens when it has its Face downward, which is the natural Situation.—There is, besides, another Difficulty, which is sometimes caused by the Ignorance of the Midwife, who, for want of Experience, hinders Nature from operating, instead of assisting it.

Having thus discover'd all the Difficulties which render a Delivery either laborious or difficult, or entirely against Nature, I must speak next of the most efficacious Means of conquering all those Difficulties: Therefore,

If the Difficulty proceeds from the Part of the Mother, she being too young, and too strait; she must be handled gently, and her Passages softened with Oil, Pomatum, or Fresh Butter, anointing them with those Things long before the Hour of her Delivery, to relax them, and render them more easy to be dilated, lest a Laceration of some Parts should happen when the Child comes into the World.

If the Woman be advanced in Years, and pregnant of her first Child, she must likewise anoint her Parts, to soften the inward Orifice of the Matrice, which being harder, cannot be so easily dilated as in young Women, which renders the Labour of Women advanced in Years always much more tedious than that of others.

Little, or ill-shaped Women, must not be put to Bed to be delivered, till after the Waters are broken; but are to stand up, and walk in the Room if their Strength permits it, being supported under the Arms; for thus they will have their Respiration more easy and free, and take a far greater Advantage of their Pains, than if they were on their Bed.

A lean Woman must humect her Parts, by anointing them with Oil, Pomatum, &c. to render them softer,

and more slippery, that the Head of the Child may not remain long in the Passage, nor be compressed or bruised, by the Hardness of the Bones of the Mother which form the Passage.

A weak Woman must be cheared up, that she may support the Pains of her Labour, with some good burnt Wine, or other Comfortatives, according to the Exigency of the Cases. If she is fearful, she must be comforted with the Hope of being soon delivered; if on the contrary her Pains be small, short, with long Intervals between, and of a bad Sort, flying back towards the Reins, or if she has none; they must be provoked by giving her pretty strong Glysters, and other proper Remedies: For I most commonly prescribe in those Cases a large Spoonful or two of a strong Tincture of Cinnamon, to which I add a few Drops of that of Ambergrease, and three Drops of Oil of Gujacum; which Remedy serves likewise, when the Pains which were very good at the Beginning, are quite gone.

If the Woman has a violent Flooding, or Convulsions, she must be delivered as soon as possible. If the Excrements be retained, and she cannot void them of herself, the Expulsion thereof must be excited by Glysters, for they cause violent Pains which are needless and bad, because they are dispersed throughout the Belly, without forcing downwards. And if she cannot make Water because of the excessive Compression of the Matrice on the Neck of the Bladder, the Woman herself must lift up her Belly a little with her Hands, and if it cannot be done otherwise, a hollow Probe must be introduced into the Bladder to facilitate the Evacuation of the Urine. If the Difficulty of the Delivery proceeds from the bad Situation of the Woman, she must be put into another agreeable to her Shape, observing all the Circumstances heretofore mentioned.

If the Woman be surprized with some Malady, the Cure thereof must be undertaken according to the Nature thereof, but with still more Precaution than at another Time:—If it be by reason of the Indispositions of the Matrice alone, as of its oblique Situation, one must remedy to it as well as he can by that of the Body. If it be by its vicious Conformation, having its Neck hard, callous, and too narrow, it must be anointed with Oil or Pomatum, as above-mentioned. If it was by some strong Cicatrice which could not be softened, proceeding from an Ulcery which had preceded, or of some Laceration made by a violent Delivery, which had likewise been glutinated, the Separation thereof must be made with a proper Instrument, lest another Laceration should happen in another Place, which would render the Case worse afterwards; and which must be made in the Place that is judg'd most convenient; avoiding to do it towards the superior Part, because of the Bladder.

If the Membranes of the Waters be so strong, that they cannot break at the Time of the Delivery, they may be broken with the Fingers, provided the Child be then very far advanced at the Passage, and follows soon after that Laceration, the inward Orifice of the Matrice being sufficiently dilated and well softened; for otherwise there would be some Danger, that the Waters being evacuated, the Child should remain a long while dry, and one would be obliged to supply to it, by humecting those Passages, with Fomentations of emollient Herbs and Oils; which has never so good an Effect as when Nature operates of itself, by means of the Waters.

Those Membranes sometimes advance so far out at the Pudendum before the Child comes out, that they hang the Length of more than four Fingers Breadth, resembling a Bladder full of Water; there is then no very great Danger to break them, if they be not broken already; for the Child is always at the Passage ready to come out when that happens. One must take Care not to draw those Membranes with the Hand, because thereby the After-birth, to which those Membranes are very adherent, would be separated from the Matrice before its Time. Sometimes also, the Waters are insensibly evacuated through a Laceration made inwardly to the Membranes of the Child, which remaining whole at the fore Part of his Head, to which they serve as a Forehead Cloth, and line it immediately, hinder him from being forced out by the Pains: In that Case the Membranes must be broke, provided the Passage be

sufficiently dilated, that the Head of the Child may be at Liberty to advance into it.

If the *Navel string* falls out of the Matrice, it must be immediately pushed back into it, hindering it, if possible, from falling out again, otherwise the Woman must be delivered as soon as possible: But if the After-birth falls out, it must never be pushed back into the Matrice, because, when once out of it, it is of no Use to the Child; on the contrary, it would be an Obstacle to his Birth, if it was pushed back; in that Case it must be cut off after the Navel-string has been tied, and the Child taken out as soon as possible; for if he was left in the Matrice he would be soon suffocated, if he was not dead already, as it almost always happens, when the After-birth, or even the Navel-string comes out first.

When the Difficulty proceeds only from the Part of the Child who is dead, one must observe the same Method as in the natural Delivery; besides which the Woman must make all the Efforts she can to force him out, for a dead Child cannot help himself, no more than when he is extremely weak; taking at the same Time some Comfortatives, lest the putrid Vapours which exhale from a dead Child, should cause her some Syncops. But if the Child be so hydropical in his Belly or Head, that he can never come out because of the great Distension and Bulk of those Parts; then the Membranes must be broke to evacuate the Waters; and if he be of a monstrous Bigness in his whole Body, or Head only, or there be two Heads, or he be joined to another Child; in those Cases (to save the Mother) one must either dilate the Passage, in Proportion to the Bigness of the monstrous Child (if such a Thing be possible) or extract him with the Instruments, if one be indispensably obliged to it, to hinder the Mother from perishing with her Child.

Note, That the Instruments are so much in Vogue at present (either through the Ignorance of the Men-midwives, or their Impatience) that they are used by them for the least Difficulty a Delivery is attended with, even when the Child is alive, well formed, and presents himself in a natural Situation, without the least Regard to the Terror those Instruments cause to the Woman, or to the Life of the Child; when those Instruments should never be used but in case of an extreme Danger; and when all other Means have proved ineffectual, or are judged entirely needless. What little Value must those Butchers have for the Life of the Mother, and that of her Child! can they believe, in treating thus that innocent Victim of their Ignorance, that he has been formed at the Resemblance of God, and created in the original Sin, of which he must be washed by the salutary Waters of Baptism before he can enter into the Kingdom of Heaven, and of which Benefit he deprives him by his murdering Hands? Can he reasonably imagine, that God will not make him account in another World, for the Loss of both the Soul and Life of that Child, he has had the Cruelty to trifle with, as if they were both of no Signification?

Note, also, That if a Midwife finds herself incapable of conquering all the Difficulties heretofore mentioned, she must send immediately for an experienced Man-midwife, and not put the Life of the Mother, and that of her Child in the most imminent Danger, by waiting till the Strength of both be entirely exhausted, and the Man-midwife must act on those Occasions according to the Manner I am going to describe in the following Paragraphs; beginning by the Observations he is obliged to make before he goes to work.

Hippocrates, in his Book of the Nature of the Child, admits but of three general Postures in which the Child can present himself to come into the World, *viz.*—The *Head foremost*, which is the sole natural Figure, when it comes in a direct Line. The second, the *Feet foremost*. The third, *Cross-ways*; which two last are entirely against Nature.

But to render the Thing more intelligible, I'll say that the Child can present himself in a Posture against Nature, four different general Ways, which are, first,

by all the anterior Parts of the Body:—Secondly, by the Posteriors:—Thirdly, by the *Alteraes*:—And fourthly, by the Feet:—To which all the other different Postures the Child presents himself in, can be reduced; according as they approach nearer one of them than the other: And as the Number of the different preternatural Deliveries is very great, I'll content myself with treating of each of the Principals of them in particular; for one will easily perform all the others, which are not of so much Consequence, if he be capable to remedy all those mentioned hereafter. But before we proceed to instruct a Man-midwife in the Means of helping a Woman in those difficult Times, it is proper I should discover the Qualifications requisite in a Man midwife, who wants to practise those Operations, with the Observations he must make before he undertakes them.

Note, That the Qualifications of a Man-midwife consist in those of his Body, and those of his Mind.—Those of his Body are, that he should be pretty strong; have small Hands, and pretty long Fingers, particularly the Index, the better to reach, and touch the inward Orifice of the Matrice; his Nails being pared close to the Flesh, without any Asperities, for fear he should scratch the Part; and without Rings on his Fingers, while he is doing the Operation: He must be of a pleasant Aspect, decent in his Cloaths as well as in his Person, lest he should frighten the poor Woman who wants his Assistance; for otherwise he would look rather like a Butcher than a Man-midwife.—As to the Qualifications of his Mind, he must be particularly very sober, not at all addicted to Wine, that he may always be in a Condition to practise whenever called for; sober, modest, and keeping religiously the Secret he is entrusted with, without divulging to Strangers the Incommodities or Maladies of his Patients, or any other Secret whatever; for he who has the cruel Perfidy to do it, deserves to be treated as the greatest Scoundrel, and abhorred by all Mankind, as a publick Nuisance.—He must also be wise, prudent, and of a sound Judgment, to govern himself in his Operations; very compassionate, without too much Weakness, whereby he could be hinder'd from doing his Duty, according as the Case requires it.—He must assist *gratis* the poor Women who want his Help, and treat them with the same Humanity and Tenderness he does the Rich; and, far from extorting any Thing from them, as is but too customary in this Iron Age, relieve them, if it be in his Power, out of his own Pocket; and not act as a famous Man-midwife did some Years ago, who being come in his Coach to a poor Woman in Labour, asked, before he could be persuaded to deliver her, who should pay him? and when he saw that neither the Woman herself, nor the Persons present could do it, went away without doing his Office; and the poor Woman had infallibly died for Want of Help, if one of the Company who knew where I lived, had not sent for me; whereby the Life of the Mother and that of her Child were saved; all that troubled me was, that I was not in a Condition of relieving the poor Woman otherwise, which is also the Cause that I want the chief Qualification of a Man-midwife, a *Coach*.

A Man-midwife, besides all the aforesaid Qualifications, must be very learned and expert in his Art, and particularly in the practical Part thereof.

The Observations a Man-midwife is obliged to make before he undertakes to deliver a Woman, are first to take Care that the Woman has Strength enough to undergo the Operation; which he will discover, if by feeling her Pulse, he finds it strong or weak, unequal and intermittent; examining besides her Face, and particularly if her Eyes be heavy and sunk, and her Speech weak; if the Matrice, and all the lower Part of her Belly be extremely high and inflamed, if all the Extremities of her Body be cold, if she has frequent Syncops attended with cold Sweats, if she falls into Convulsions with Loss of Knowledge; and lastly, if all her Countenance indicates that the Operation would be needless, and is not to be undertook without the imminent Danger of the Woman dying in the Man-midwife's Hand.

But when there is yet some Hope, let it be ever so little, either for the Mother or for the Child, one is obliged in Conscience to do what the Art prescribes; But before the Man-midwife undertakes it, he must let the Husband and Assistants know the great Danger the Patient is in, that they may not be so much surprized if she was to die in the Operation, or soon after.

But when a Woman has all her Strength, the Man-midwife conscious that she is capable to undergo the Operation, must inform himself if she be at Term or not; and if any Accident has happened to her, which he'll know by the Account of the Patient, of the Midwife, and of the Assistants, as likewise by the Signs which will appear, observing in what Figure the Child presents himself, and in what Circumstances, if he be dead or alive, and if there be but one, or several. Having observed all those Things, he'll endeavour to make the Patient understand, the Impossibility of her being delivered without his Assistance, persuading her at the same Time that the Operation will not be so painful as she imagines.

Afterwards, he must place her on her Back across the Bed, that he may work with more Ease, her Buttocks a little higher than her Shoulders, or at least her Body equally situated, when it is necessary to turn the Child to make him take another Situation.

But when the Child is to be extracted, the Woman must be placed in the Situation mentioned, when I have spoke of the natural Delivery, so as to have her Head and Breast a little higher than the rest of her Body, to ease her Respiration, and that she may act her Part in the Expulsion of the Child, by straining and forcing downwards, when the Midwife bids her. Thus situated, she must have her Legs folded in such a Manner that her Heels be pretty near her Buttocks, and her Thighs separated from one another, and kept in that Posture by two pretty strong Persons; another holding her under the Arms lest her Body should follow in the Extraction of the Child, which is most commonly attended with a great Effort on the Part of the Man-midwife, who should make all the Deliveries against Nature, setting on a Chair of a Height proportioned to the Situation of the Woman, the outward Entrance of whose Matrice must answer to very near the Height of the Man-midwife's Elbow while setting, that he may operate with a greater Security and Facility, without fatiguing himself to Excess; for when he has once fatigued himself in operating, he cannot work afterwards with the same Dexterity, nor so quick.

Thus done, he must anoint the whole Matrice with Oil or Pomatum, that he may easily introduce his Hand into it, which must be anointed likewise, and have the other Conditions above-specified; after which he'll govern himself in his Operation, in the Manner I am to describe hereafter, shewing previously to it the Signs which indicate that a Child is living, or dead, in the Matrice.

Note, That in all the Deliveries against Nature, which proceed only from the bad Situation of the Child, without being accompanied with any other considerable Accident, one must wait to extract the Child, till the Matrice be passably open, and its inward Orifice sufficiently prepared and softened, particularly if it be a first Child. Therefore when it is perceived that the Child presents himself in a bad Situation at the Beginning of the Labour, the Membranes which contain the Waters must not be broken, but at the Time the Passages are found disposed to permit the Extraction of the Child without much Violence; and if the Waters are evacuated before the Matrice can be sufficiently open, one should notwithstanding wait a little the Preparation of the Passages, if there be any Appearance of it, without however suffering the Parts to grow dry by the entire Evacuation of the Waters. For though the Child be in a bad Situation, he is notwithstanding sufficiently vivified by the Navel-string while he remains in the Matrice, and is not yet much engaged in the Passage in his bad Situation; and the Mother on her Side is no otherwise incommoded thereby, than by the Tedioussness of her Labour. If a Man-midwife should act otherwise, the

Child would be in a much greater Danger to perish in the Passage at the Time of the Operation, because of the Narrowness of the Space, which would detain him longer, the Operation itself be attended with much more Difficulty, and the Mother treated with more Violence.

Note, also, That in such premature Labours, as at the Term of four or five Months, or thereabouts, and much more in all the other Terms of Pregnancy, which are less advanced, particularly if a Woman is already gone her full Time with other Children, a Man-midwife need not take much Trouble to reduce those Abortives into a better Situation than that they present themselves in; for the Orifice of the Matrice having been once dilated by the Passage of a Child of a full Proportion, and at Term, can dilate itself enough by the sole Operation of Nature, to leave a free Passage to this last Abortive, whose Bigness (tho' he be in double) does not equal that of the first who came at Term; and for that Reason it is more safe to commit entirely to Nature, the Expulsion of those Abortives of three or four Months, who are in a bad Situation; though I know by Experience, that in some Conjunctions, especially when the Woman is extremely weak, the Hand of a Man-midwife is of a very great Service; for I once delivered a very young Woman of an Abortive of five Months, and which was her first Child, where I was obliged to do the whole Work, Nature being then so weak, that I had not the least Assistance from it; notwithstanding which I extracted the Child without Instruments, and the Woman has been pregnant several Times since, and has at this present Time several fine Children.

If there be an Occasion where a Man-midwife wants more Reflections, and must use more Precaution in Things which relate to his Art; it is where it is question to judge if the Child in the Matrice be alive or dead; for it happens sometimes that Children, thought dead, have been extracted alive, and maimed of both Arms, or of some other Parts of their Body; and others have been miserably killed with Hooks, who could have been extracted alive, if the ignorant Man-midwife had not been mistaken; though most of our Men-midwives here are *Gentlemen of the Hooks*, and without considering if the Child be alive or not, draw him with some Instrument, though it could be very well done with the Hand, if they were not in such Haste to receive their exorbitant Fee; so that if by Chance the Child lives, well and good, if not, he has done his butchering Operation, and must be paid.

But however, without following so barbarous an Example, a Man-midwife before he fixes on the Manner of making the Extraction of the Child, and to avoid so great a Misfortune as that of killing a little innocent Creature, and not be reproached with being the Author of so deplorable a Spectacle, he must take a particular Care not to be deceived, Timidity on that Occasion being far preferable to a too great Temerity.

He'll know that the Child is alive (when he is at Term, and the Woman has not been wounded) if the Mother had her Health during the whole Time of Gestation, and is in Health at the Time of her Labour, and feels her Child move; which to know with a still greater Certainty, he must himself lay his Hand on the Belly of the Woman; for some of them have pretended to have felt their Child a little before their Labour, though he was dead then; and others whose Child was alive, though they pretended they had not felt him stir for two or three Days before their Labour; because after the Evacuation of the Waters the Child is sometimes so pressed by the Contraction of the Matrice, that it leaves him no Room to move as he did before the Evacuation of the Waters.

If by the Motion of the Child, a Man-midwife cannot be sure that he is alive, when the Waters are broke, he must slide as soon as possible his Hand gently into the Matrice, where he'll feel the Pulsation of the umbilical Arteries, which will be much stronger if he touches it very near the Belly of the Child; or having found one of the Child's Hands, he'll feel the Artery of the

Wrist,

Wrist, but it has not then so sensible a Motion as that of the umbilical Arteries; if then he feels the Pulsation of those Arteries, he may be sure that the Child is alive; as likewise, if having put the Extremity of his Finger into his Mouth, he feels the Tongue stir.

But on the contrary, the Child is dead, if he has not stirred for a considerable Time; if the Matrice voids fetid and cadaverous Humidities; if the Woman feels excessive Pains, and a great Weight in her Belly; if the Child falls like a Lump always on the Side she lays; if she has Syncops, and frequent Convulsions; if it is long since the Navel-string, or After-Birth is come out; if introducing the Hand into the Matrice the Child is felt cold, his umbilick without Pulsation, and his Tongue immoveable; and if feeling his Head, it is found soft, and the Bones vacillant, the Brain being without Pulsation when the Child is dead; who, in the Opinion of most Men-Midwives, is more corrupted in two Days, he thus remains in the Matrice after the Evacuation of the Waters, than he would be in four, out of the Matrice; which happens, say they, because of the Heat and Humidity of the Place, which are the two Principles of Corruption; but they pretend, that sometimes Children have been seen to remain whole Weeks dead in the Matrice, without any great Corruption, when there is no Evacuation of the Waters, in which they are preserved as in a Pickle.

But we can only draw Conjectures of the Death of the Child, if the Woman has been wounded, if she has a great Flooding, if she is not at Term; if there be four or five Days since her Waters are broken; if she has a leaden Colour, her Eyes much sunk; and a dejected Look; if her Breath be very bad, her Breasts flabby, and the Bigness of the Bottom of her Belly has been diminishing for some Time, without the Evacuation of the Waters.

Note, That most of the Signs above-mentioned, as well the most sure, as those by Conjectures, must meet together to certify that a Child is dead, for several of them are equivocal, when they are alone; as for Example, that of the fetid and cadaverous Excretions, which could easily deceive those, says M. *Mauriceau*, who do not consider, that there may be two Children in the Matrice, one dead and corrupted, and the other alive and sound; which, he says, he saw happen several Times; and especially on an Occasion where he deliver'd a Woman of two Boys, the first of whom was dead, and entirely corrupted, whence flowed the stinking Lochia the Woman had voided; and the other alive.

Note also, That the Excretions of the Matrice can be render'd fetid and cadaverous by the sole Corruption of some Clods of extravasated Blood, which has sojourned for some Time in the Matrice; which does not hinder the Child from being alive; and the greenish and blackish Waters which some Women void before their Delivery, are not always a sure Sign that their Child is dead; for some Women have been deliver'd who voided such Waters having the Navel-string and After-Birth of a livid Colour, and appearing much corrupted, notwithstanding which, their Children were alive. But when those Waters have, together with those strange Colours, a cadaverous Smell, as of rotten Flesh, then it is very likely that the Child is dead.

As to the Sign taken from the Length of Time the Woman has been without feeling her Child stir, it is likewise uncertain; for there are Children, who tho' they be alive, are sometimes two whole Days in the Matrice, after the Waters have been evacuated, without a manifest Motion; because the Matrice by its Contraction, leaves no more Room for that Motion; to which the Debility of the Child can also much contribute.

Note again, That it is not a Sign that the Child is dead in the Matrice, because he has voided the *Mæconium*; since nothing is more common in preternatural Deliveries, than to see Children alive, who have eased themselves in the Matrice, as do all those who present themselves the Backside foremost, who void always

the *Mæconium*, as well as several others who present themselves in other bad Postures, because their Belly is much pressed on those Occasions, and particularly when the Man-Midwife is obliged to turn the Child in the Extraction.

Note besides, That having described all the Signs which can indicate if the Child be alive or dead in the Matrice, I must shew at present what is to be done in each of the *preternatural Deliveries*, which the Man-Midwife ought never to undertake, before he has baptized the Child, if alive, and there is Appearance of a hard Labour, on the Part which presents itself first; lest it should be too late to do it after the Operation, in which several, already very weak, die.

How to help a Woman when the Child presents one or two Feet foremost.

Though several Authors are of Opinion, that a Child who presents one or two Feet foremost, is to be turn'd in the Matrice, and reduced to his natural Situation, viz. his Head foremost; that's impracticable, by Reason of the extreme Violences the Mother and her Child would suffer on that Occasion, and the great Risk they would run of their Lives. Therefore so soon as the Man-Midwife has discover'd that the Child comes in that Situation, he must place the Woman in the Posture heretofore described for preternatural Deliveries; and having anointed his Hand with Oil or Pomatum (always supposing that the Matrice is sufficiently open to give Passage to it) introduce it gently into the Entrance thereof, where finding the Feet of the Child, he'll draw him out in that Posture, in the Manner I am going to describe.

But if the Child was to present but one Foot, the Man-Midwife must carefully examine if it be the Right or the Left, and in what Figure it presents itself; for those Reflections will let him know, on which Side the other Foot can be; which having observed, he must go to fetch it, and having found it, draw it gently out, with the former; taking Care, previously to this, that *that* Foot be not that of another Child; for if it was, he could sooner kill the Mother and the Children than extract them thus; which he'll easily discover, if having introduced gently his Hand along the Leg and Thigh of the former, as far as to the Groin, he finds that both Thighs belong to one and the same Body; which is also an easy Means of finding the other Foot, when there is but one which presents itself at first.

So soon as the Man-Midwife has found the two Feet of the Child, he must bring them out; then taking them with both his Hands, above the Ankles, and holding them near one another, he'll draw them equally in that Manner, till the Thighs and Hips of the Child be extracted, laying hold sometimes, likewise, of the Thigh above the Knees, so soon as there will be Room to do it, taking Care to envelope those Parts with a Piece of dry Cloth, lest his Hands which are greasy, should slip on the Body of the Child, very slippery of itself. Which done, holding always the Child by his two Feet, and above the Knees, he'll draw him thus, till the Top of the Breast; after which, he'll pull down, on each Side, the two Arms of the Child along his Body; observing to take them rather by the Hands towards the Wrist, than by any other Place, and to disengage them gently, from the Passage one after another, without forcing them too much, for fear of breaking them, as those who operate without Method, often do; and taking Care, then, that the Belly and Face be directly downwards; to avoid the Head being stopped at the Chin by the Os Pubis, therefore if he was not in that Situation, he should be turned; which may be easily done, if when one begins to draw the Child by the Feet, they be inclin'd, in turning them by Degrees, in Proportion as the Extraction is made, till his Heels regard directly the Belly of the Woman; and if they were not quite in that Situation, when the Child has been drawn as far as to the Top of the Thighs, before he be drawn further out, the Man-Midwife must introduce one of his Hands, as far as is possible, so far as to the Pubis of the Child, and with his other Hand hold the two Feet, to turn, at the best Time, his Body on that Side it is the most disposed to

receive a good Situation, till he has his Breast and Face downward; and having thus brought him up as far as towards the Top of the Shoulders, he must take great Care to take his Time (bidding the Woman to make some Effort at that very Instant) that his Head may take the Place of the Feet at the same Moment they have quitted it, whereby he will not be stopped at the Passage.

Note, That notwithstanding all these Precautions, some Children have the Head so big, that it remains stopped at the Passage, after the Body is entirely out of the Matrice. In that Case the Operator must not amuse himself to draw only the Child by the Shoulders; for sometimes the Head would sooner be separated from the Neck, than be drawn out in that Manner; but while some other Person draws gently the Body of the Child, holding him by the two Feet, or below the Knees, the Operator must disengage by little and little, the Head of the Child from between the Bones of the Passage; which he'll do in sliding gently one or two Fingers of his left Hand into the Mouth of the Child, to disengage the Chin first, and with his right he'll embrace the back Part of the Neck of the Child above his Shoulders, to draw the Head afterwards with the Help of one of the Fingers of his left Hand, thrust into the Mouth of the Child, to disengage the Chin, as above-mention'd; the Chin being the Part which contributes more towards stopping the Head at the Passage, which cannot be disengag'd till the Chin has been disengag'd first; taking Care, likewise, to do it at quick as possible, for fear the Child should be suffocated, which would infallibly happen, if he was to remain long thus stopped; because the Navel-string which is out, being cooled and strongly pressed by the Body or Head of the Child, which remains too long in the Passage, the Child cannot then be kept alive by Means of the Substance of the Mother, the Circulation whereof is stopp'd in the Navel-string. Therefore when a Man-Midwife has once began to extract the Child, he must draw him out entirely as soon as possible; and immediately after deliver the Woman of the After-Birth, in the Manner heretofore described.

Note also, That when the Child is alive, it is not very difficult to give to the Head that Situation downwards; because all the Parts of a live Child, having some Support and Stability, the Head follows most commonly the Body, and turns itself on the same Side; which does not happen to the Head of a dead Child, because his Neck being grown limp, and without Solidity, does not contribute towards making the Head take a good Situation, though the Man-Midwife has given it to the Body; in which Case the Body of the Child being entirely out, his Head is stopped at the Passage, because it is not directly situated downwards as the Body is. Therefore he must not amuse himself to draw the Body of the Child, before he has likewise reduced the Head in a right Figure, *i. e.* made it look downwards, which is done by sliding the Hand very flat on the Face of the Child, to cover the Inequalities thereof, which Help, with embracing it, to make it turn easier, and to give it a commodious Situation, thrusting likewise a Finger into the Mouth to disengage the Chin from the Passage; taking Care, however, to turn with the other Hand the Body of the Child, or to have it turn'd by another Person, that it may follow, at the same Time, the Motion is given to the Head; observing the same Thing, likewise, when the Head of a live Child is stopped, in the same Manner, at the Passage, because of his bad Situation. For if one should make the Head turn without the Body, or the Body without the Head, the Child would be killed in the Operation.

Though a Man-Midwife takes all the Precautions above mention'd for the Extraction of the Child by the Feet, there are sometimes Children so much corrupted, that with the least Effort, their Head is separated from their Body, and remains alone in the Matrice, out of which it cannot be extracted but with much Difficulty; it being extremely slippery, by Reason of the slimy Humidity of the Place where it is, and likewise because

it is of a round Figure, where there is no Hole: If not, withstanding the Head, which is thus left in the Matrice, is small and soft, as that of abortive Children, it may be easily extracted; but if it be very large and solid, the Difficulty is commonly so very great, that two or three Men-Midwives have sometimes attempted it without Success, whence the Death of the Woman has ensued; though they had perhaps prevented that Misfortune, if they had operated in the following Manner.

When the Head of the Child, separated from his Body, remains alone in the Matrice, either by Reason of Putrefaction, or for another Cause; the Man-Midwife must immediately, without Delay, and before the Matrice closes itself, introduce his right Hand into it, and search the Mouth of that Head (which is the only Hold remaining then) and having found it, thrust one or two Fingers into it, and his Thumb under his Chin, after which he'll draw it softly, holding it thus by the inferior Jaw-bone. But if that Bone was to part from the Head, in the Efforts made to extract it, as it happens often when there is Putrefaction; in that Case he must take his right Hand out of the Matrice, to slide the left into it, with which he'll support that Head, and with the right take a narrow, but very strong Hook, and with a single Branch, which he'll slide along the Inside of his other Hand, turning the Point towards it, for fear of wounding the Matrice; and thus introduced shall turn it towards the Head, to run it into the Orbit of the Eye, or into the Holes of the Ears, or into that of the Occiput, or between the Sutures, according as he'll find it most practicable, endeavouring always to lay hold of the Place he'll fix it to, as fast as possible; after which drawing that Head thus fasten'd to the Hook, and helping with the left Hand to guide it, he must make the entire Extraction thereof; taking Care, when brought near the Passage, to draw his Hand out of the Matrice, lest the Passage should be streighten'd therewith, leaving only some Fingers towards the Side of the Head, to disengage it with more Facility, and to hinder the Matrice from being wounded by the Hook, in case it should chance to lose its Hold.

Note, That in a Case of Necessity, and for Want of a Hook, take a Piece of soft Tape, three Fingers broad, and two Yards long, or thereabout, folded in two, and laying hold of both Ends with the left Hand, introduce with the right the Middle thereof into the Matrice, so that it may be placed on the hind Part of the Head, as a Stone in a Sling; and then drawing the Tape by the two Ends joined together, make the Extraction of the Head, without the least Fear that the Tape should stop the Passage, since it takes but very little Room. — For my Part, I am of Opinion, that this is the safest Manner of making that Extraction, and have always preferred it to a Hook, with very great Success; since with a Hook, unless it be guided with a great Dexterity indeed, one is always in Danger of scratching the Matrice; besides that in the Efforts one makes, especially when the Head is putrified, the Hook comes out with only that Part of the Head it was fasten'd to, so that it renders the Operation tedious, and very laborious, both for the poor Patient and the Operator, who is obliged to introduce his Hook at several different Times in the Matrice, before he can accomplish the whole Operation; when as the Tape never misses bringing out the whole Head at once. Some will have that Tape anointed with Oil or Pomatum; but I am of a contrary Sentiment, and provided it be very soft, I would introduce it as dry as possible, since there is always Humidity enough in the Passages, to hinder it from hurting them; and if it was too slippery, it would not be so soon, nor so easily fasten'd on the Head, and would be more apt to quit its Hold.

If notwithstanding all these different Manners the Man-Midwife cannot extract the Head because it is too large, he must diminish the Bigness thereof with a bowed Knife; introducing first his left Hand into the Matrice, and with the right sliding likewise that Knife into it, taking great Care in doing it, that the Point of the Knife be turn'd towards the Inside of his left Hand, for fear of wounding the Matrice; which done, he'll turn

it again towards the Sutures of the Head, and particularly towards the Place of their Junction, where he'll make an Incision with that Instrument; whereby having separated some Pieces thereof, he may with a greater Facility draw the rest; or at least having emptied Part of the Brain through the Aperture he had made, the Bigness of the Head being thereby much diminished, the Extraction may be less penible.

Note, That the Left-Hand being thus introduced into the Matrice, will serve to place the Knife for the Division and Separation of the Parts of the Head, as likewise to hinder the Matrice from being wounded through Inadvertency; and the Right with which he'll hold the Handle of the Instrument, which must be pretty long, will serve to carry it and move it, on what Side he'll think proper. For my Part I would make use on that Occasion, of a Hook with several small and short Points, proper to fix into the Sutures of the Head, and introducing it into the Matrice in the same Manner, and with the same Precautions the Knife above-mentioned is introduced, forces those Points into the Sutures, which are then pretty loose, and with the Right-Hand, which holds the Handle of the Hook (that Handle being like that of the Knife) turn and shake gently the Hook, whereby the Bones of the Head are shaken likewise, and forc'd at last to part from one another, and are afterwards easily extracted with the Hand, without putting the Woman to that tedious Torture of paring or cutting them with the Knife, for this Operation is very soon done, especially if the Head be corrupted.

After the Extraction of the Head out of the Matrice, no Portion thereof must be left in it; after which the Woman is to be delivered of the After-birth, if she was not deliver'd of it before.

Note, That it is asked on this last Subject, if when the Head of the Child is thus left in the Matrice, the Woman being not yet delivered of her After-birth, one must begin the Operation by the Extraction of the Head, before that of the After-birth? Which Question may be answered by a Distinction: For if the After birth be quite separated from the Matrice, it must be extracted first, otherwise it would be an Obstacle to the Extraction of the Head: But if it be yet adherent to the Matrice it must be left in it, till after the Extraction of the Head; for if the Midwife was to separate it then from the Matrice, there would ensue a very great Flooding, which would be increased by the Agitation of the Operation; for the Vessels to which it is joined remain commonly open, while the Matrice remains in the Distension caused by the Head retained in it, and do not close till after it has been delivered of that foreign Body; besides which, the After-birth remaining thus fastned during the Operation, hinders the Matrice from being easily contused and wounded.

Note, also, That M. *Mauriceau* says, that he delivered a Woman, whose Child had been killed by her Midwife, who wanting to draw him by the Feet, which he presented foremost, had not had the Precaution, nor the Dexterity to turn his Face downwards to give him a good Situation, which was the Cause that his Head remained at the Passage, stopped by the Chin, under the Os Pubis of the Mother, where he had perished. That famous Operator sliding his Right-Hand as far as on the Face of the Child, and thrusting one of the Fingers of the same Hand into his Mouth to loosen the Chin, and disengage it from the Passage, turned his Face downwards, and at the same Time his Body, which he supported with his Left-Hand, to give it the same Motion of the Head, after which he extracted easily the Head of that Child dead for Want of a timely Assistance.

The Manner of delivering a Woman when the Child pushes out foremost the Neck of the Matrice.

If we consider the Manner of the Child coming into the World in this Delivery, we may say that it is natural; but if we consider the Disposition of the Matrice which is in Danger of coming out in the Delivery, or Ex-

traction of the Child, we'll know, that it is not quite so; for his Head pushing out the Matrice foremost, can easily cause that Accident, if the Woman is not assisted with Dexterity. On that Occasion the Vagina is seen to come out in large Wrinkles in Proportion as the Child advances.

Women, whose Matrice used to fall before they were pregnant, or have it very humid, are subject to that Accident, because of the Relaxation of its Ligaments.

In this Case the Woman is not to walk in her Room as in a natural Delivery, but must be in her Bed, her Body almost equally situated, and not so much risen as in a natural Delivery; and to help her effectually, at every Pain, when her Child begins to come forward and to push out thus the *Vagina*, the Midwife must always keep one Hand on each Side of his Head to repulse, in resisting to the Pains of the Woman, the Matrice alone inside, leaving Room at the same Time for the Child to advance forward; continuing thus till the Mother of herself forces the Child quite out; for he is by no Means to be drawn out by the Head, as in a natural Delivery, for Fear of causing thereby the Fall of the Matrice, which, at that Time is much inclined to it.

But if notwithstanding, the Child having his Head out at the Passage, was to be stopped so long there, as to be in Danger of being suffocated, then one would be obliged to call a second Person, who should draw him gently by the Head, while the Midwife holds and pushes up the Matrice with her Hands, lest it should follow the Body of the Child in drawing him out in that Manner.

After the Woman has been thus delivered, she must be delivered likewise of her After-birth in the Manner heretofore described, taking Care for the same Reason not to draw it, and shake it with too much Violence; which done, the Matrice must be put and kept in its natural Situation, if it was come out.

Note, That if a Midwife does not observe the Method above described, she is the Cause sometimes that the Matrice falls, and comes out quite at the *Pudendum*; becoming then of an extraordinary Length and Bigness, because the Humours flow thither in great Abundance; as it happened, says M. *Mauriceau* to the Wife of a Joyner of *Paris*, who being in Labour, could not be delivered, because the *Vagina*, was entirely come out at the *Pudendum*, of a prodigious Length and Bigness, that it exceeded half a Foot in Length, and was once bigger than the Head of a Child. At its Extremity was seen the inward Orifice of the Matrice, which represented a Kind of large *Phymosis*, the Borders whereof were above three Fingers thick in its whole Circumference; which streightened so much the Passage, that the Child being stopped in it, pushed still more and more the Matrice outwards, and the Humours flowing thither in Abundance, because of the vain Efforts the Woman made, swelled extraordinarily the *Vagina*, and had infallibly caused a Mortification in that Part, if the poor Woman had not been quickly delivered; which was done, not by reducing the *Vagina* thus fallen, a Thing impracticable then, not only because of its extreme Bigness, but likewise because the Head of the Child being too much advanced into the Passage, could not have been pushed up without an extreme Violence, which had proved prejudicial both to the Mother and Child; but by introducing by degrees the Hand, anointed with Oil, into the Aperture of that large *Phymosis*, bidding the Woman to push downwards, guiding the Head of the Child at every Pain, and making it thus advance little by little into the Passage, prepared to it by the Hand, stretching the Fingers in the Form of a Dilatory, and drawing them out by Degrees in Proportion as the Head of the Child advanced forward, till it was quite brought out, by the sole Pains of the Woman, which were very strong; after which having laid hold of it on both Sides, the Child was easily brought into the World alive: Which done, the Matrice was immediately reduced into its natural Situation; the Midwife being ordered to touch every Day the lower Parts, for Fear of a Mortification, to which they were much disposed. I hope that this Accident could not have arrived to that

gree of Danger, but through the Negligence or Ignorance of the Midwife, which otherwise she could have prevented in some measure, if when she perceived at first the *Vagina* inclined to come out at the *Pudendum* (which could not happen but through the excessive Humidity of the Matrice, and the Difficulty its inward Orifice had to dilate itself) she had introduced by degrees some Fingers into that Orifice to facilitate its Dilatation, in the Manner practised in natural Deliveries, supporting at the same Time the *Vagina* with the other Fingers.

How to assist a Woman whose Child presents himself by the Side of the Head; and likewise when he presents himself the Face foremost.

Though a Delivery where the Child presents himself by the Side of the Head seems to be natural, because the Head comes foremost, it is notwithstanding very dangerous both to the Mother and the Child, because of that bad Posture; for he would sooner break his Neck, than to come into the World in that Manner; and then he is much more embarrassed in the Passage, than the Mother makes Efforts to push him out; which it is impossible for her to do, unless the Head of the Child be set right, that he may come out in a direct Line. Therefore as soon as it is found that the Child presents himself in that bad Posture, the Woman must be bid to lie down, for Fear it would be very difficult to push in the Child (as it must be done, to make him take a natural Situation) if he was advanced further into the Passage.

To perform this Operation, the Woman must be put in a commodious Situation, making her to lean a little on the Side opposite to the bad one of the Child; then the Man-midwife shall slide his Hand, well anointed with Oil, on the Side of the Head of the Child, to set it right; bringing it, gently, with his Fingers, placed between it and the Matrice, to a right Situation; but if the Head was so much engaged, that the Thing could not be effected in that Manner, he must slide his Hand as far as the Shoulders of the Child, that pushing them back a little into the Matrice, he may put him in a natural and convenient Situation.

Note, That it would be still better if the Man-midwife could push thus the Child back by the Shoulders, with his two Hands; but his Head occupies then the Passage in such a Manner, that it is often with the greatest Difficulty that he introduces one into it, with which he is obliged to perform the Operation, assisted with the Ends of the Fingers of the other, carried as far as it is necessary; which done, he must procure the Birth of the Child, in the same Manner of a natural Delivery; taking Care to set the Child's Head right as soon as possible, after the Evacuation of the Waters; for if it is not soon remedied, the Head being fallen back on the Shoulders, engages itself so much into the Passage, and the Unequalities of the Face, being thrust into the Substance of the Matrice, it is very difficult afterwards to give it a good Situation.

But if the Head cannot be reduced, because of the bad Situation of the Body of the Child, which hinders its being set right; then one must have Recourse to the last Remedy to save the Child's Life, which is to turn him entirely, by going to fetch the Feet, to draw him by them in that same Moment.

At other Times the Child presents himself with his Face foremost, having his Head bent backwards, in which Posture it is very difficult to bring him into the World; and if he remains long in it, becomes so livid and puffed up, that he appears monstrous.

A Man-midwife must proceed in this Delivery in the Manner prescribed, when the Child presents his Head sideways, which must be set right with the Hands, observing always to do it as gently as possible, for Fear of hurting the Face of the Child.

The Method of Delivering a Woman, when the Body of the Child is stopped at the Passage by the Shoulders, after the Head is come out.

When a Child will be thus stopped by the Shoulders,

a Man-midwife must make Haste to deliver him out of his Prison, otherwise he would soon be suffocated. To avoid therefore that Accident, he must endeavour to make the Shoulders follow and pass, by drawing gently the Head of the Child, sometimes by the Sides, and sometimes likewise by taking it with one Hand under the Chin, and with the other on the back Part of the Head, and thus proceeding alternately from one Side to the other, to facilitate the Thing, taking great Care that the Navel-string be not embarrassed round the Neck; and observing always not to draw the Head with too much Violence, for Fear of separating it from the Body, as it sometimes happens through the Imprudence of the Midwife.

If the Shoulders don't pass after the Head has been pulled in that Manner, the Man-midwife must slide one or two Fingers of each Hand under each Arm-pit, with which, bending them inwards, the Shoulders will be drawn by degrees; but when they have entered the Passage, and are entirely disengaged from it, if he cannot have the Child yet, holding him thus under the Arm-pits, then it is sure that he is stopped by some other Impediment, and is certainly monstrous in some Part of his Body; or, as it happens often on that Occasion, he is hydrofiscical of the Abdomen, which hinders him from being extracted from the Matrice, by reason of the Eminence and Bigness of his Belly, without a Punction to procure the Evacuation of the Water; which is done by introducing the Left-Hand into the Matrice, as far as to the Place where the Belly is, and then running along the Inside of the same Hand with the Right, a Hook, or a bowed Knife, the Point thereof turned towards the Belly of the Child, that Point must be thrust into it at once; and when it is extracted from the Hole it has made, two Fingers must be introduced into it to dilate it, whereby all the Waters are evacuated in an Instant; after which the rest of the Body of the Child stopped in the Matrice, is extracted without Difficulty.

The Manner of assisting a Woman in a Labour where the Child presents one or both Hands together with the Head.

When some Part of the Child presents itself with the Head, it is most commonly one of his Hands, or both; which hinders him from coming out, because the Hands fill up Part of the Passage, and make likewise the Head to lean on one Side. When the Child comes in this Manner, the Labour is preternatural, and the Woman wants Assistance.

To give her that Assistance, if a Midwife, or Man-midwife, finds that one of the Hands presents itself thus, together with the Head of the Child, he must not be suffered to advance further, and to engage himself more in the Passage in that Situation; therefore having made the Woman to lay down, so as to have her Buttocks a little risen, he must push back with his Hand, as far as possible, that of the Child, or both, if they both present themselves, giving Room by that Means to the Head of the Child to advance forwards alone; which done, if the Head was sideways, he must reduce it to the natural Situation, *i. e.* place it in the Middle of the Passage, to make it come out in a straight Line.

Note, That if a Woman is soon succoured in that Manner, when it is not long since the Waters have been evacuated, if she has good Pains, and her Matrice be sufficiently dilated, she will have a happy Delivery:— But if the Matrice be dry, and is not sufficiently dilated, the Hands of the Child will not be pushed back without much Difficulty, and without doing some Violence to the Mother; and if she has not good Pains, the Head will not so easily, nor so soon descend to the Passage to fill the Place which was occupied by the Hands, before they were pushed back. Therefore the Man-midwife must endeavour, as much as possible, in pushing back thus the Hands of the Child with his own, not to draw his out of the Matrice, but at the Time of a new Pain to the Woman; that at that very Instant he may bring the Head of the Child to the Passage, to hinder thereby his Hands from taking again their former Situation.

How to assist a Woman in Labour, when the Child presents one or both Hands alone.

When the Child presents one or two Hands alone, or an Arm, which sometimes comes out as far as the Elbow, and even as far as the Shoulder, it is one of the worst and the most dangerous Postures he can present himself in, either for himself, or for the Mother, because of the violent Efforts a Man-midwife is always obliged to make, to one and the other, to fetch his Feet, which are at a great Distance, by which he is always to be drawn on those Occasions, after he has been turned.

Therefore when a Hand alone, or a whole Arm presents itself foremost, or both Hands or Arms, the Woman having been placed in a proper Situation, the Hands or Arms of the Child which present themselves at the Passage, must be quickly pushed back into the Matrice, the Man-midwife sliding afterwards his Hand into the Matrice, under the Breast and Belly of the Child, and so far that he may reach the Feet, which he'll draw gently to himself to turn him, and extract him by them; taking Care to do it with as little Violence as he can; without amusing himself to give the Child a natural Situation; which it would be very difficult to do, because he has his whole Body cross-wile, when he presents thus an Arm alone, as far as the Elbow or Shoulder; observing when he thus introduces his Hand into the Matrice, that he must slide it Inside of the Membranes of the Child, and not between the Membranes and the Matrice; for those Membranes, which line the whole Inside of the Matrice, facilitate by their polished slippery Substance, the turning of the Child, and hinder, by their Interposition, the Matrice from being hurt by the Hand of the Man-midwife in the Operation.

As soon as the Man-midwife has thus turned the Child by the Feet, if he was to lay hold but of one, he must search the other to bring it along with the first; that holding both, he must govern himself in the Extraction of the Child, in the Manner described for the Delivery where the Child presents his Feet foremost.

But if the Arm was so far advanced, so big and so tumified, that he could not be put back without much Difficulty, *Ambrose Pare* advises, if the Child is dead, to cut the Arm, as far as possible; though it is far better, and safer to wring it off, because its being very tender, it will be easily separated from the Body, at the Articulation of the *Humerus* with the Shoulder Bone. But when a Child is to be mutilated thus, or extracted with a Hook, the Man-midwife must be very sure that he is dead, and not follow the cruel Practice of some of our great Men-midwives, who for the least Difficulty have always Recourse to that murdering Instrument, whether the Child be dead or not.

How to deliver a Woman when the Child presents his Feet and Hands.

If the Child presents his Hands and Feet together, it is absolutely impossible he should come out in that Situation; therefore the Man-midwife carrying his Hand towards the Orifice of the Matrice, will feel nothing but a Quantity of Fingers near one another; and if the Matrice be not well open yet, he will not be so soon able to distinguish precisely the Feet from the Hands, because they are so close together, that they seem almost all of the same Figure. But so soon as the Matrice will be dilated enough for to introduce the Hand into it, he'll distinguish easily which are the Hands, and which the Feet; and then he'll slide it as far as towards the Head of the Child, which he'll find pretty near, he'll push it back gently, together with the Hands towards the Bottom of the Matrice, leaving the Feet in the same Place where he has found them; then placing the Woman in a commodious Situation, *i. e.* her Buttocks a little rising, he'll take the Child by both Feet, and draw him in the Manner heretofore described, when I treated of extracting a Child by the Feet.

Note. That it happens pretty often, that when the Waters have not been long evacuated, the Child being then drawn only by the two Feet, his Body turns of itself in the Matrice, without it be necessary to push it back, as above-mention'd. But when the Matrice is dry, and the Child far engaged in the Passage, one is

obliged to push the Head and Hands back, to turn him with more Facility; for if the Operator would then content himself with only drawing the Feet, that would be of no other Service than to engage the Body still more and more in the Passage.

How to deliver a Woman when the Child presents his Knees.

If the Child, because he has not turn'd himself as he should have done towards the last Months to come into the World, the Head foremost, presents himself by the Knees, having his Legs folded near the Buttocks; then the Man-Midwife, because of their Hardness and Roundness, in feeling but one of them, could mistake it for the Head, especially if the Child being yet very high, he cannot feel it but with the Extremity of the Finger; but when he is fallen lower, and the Matrice is more dilated, he can easily make the Difference, as well between the Head and the Knee, as between the Knee and the Elbow; because the Roundness of the Knee is much more ample and even than that of the Elbow, which is more peaked.

Therefore having discover'd that it is the Knees the Child presents, he must not suffer him to advance further; but having placed the Woman in a convenient Situation, he must push the Knees of the Child gently back into the Matrice, to be more at Liberty to unfold his Legs one after another; which to effect, he must put one or two Fingers under the Ham, and guiding it slowly along the hind Part of the Leg, which he'll draw always a little obliquely, till he has found the Foot, that having disengaged one of them, he may do the same to the other, proceeding in the same Manner, as he has done to the first; after which having drawn them both out, he'll make the Extraction of the Child, as if he was to come his Feet foremost; observing always to extract him the Face downwards.

Of a Delivery where the Child presents the Shoulder, Back, or Buttock.

The worst of these three Situations, in which the Child presents himself, sometimes, is that of the Shoulders, because it is the most distant from the Feet of the Child, the Man-midwife must search to draw him out by the Feet; that of the Back is next to it, and that of the Buttock, the less difficult of the three; not only because the Feet are very near to it, but likewise because in that Figure the Head and Neck of the Child are not so constrained as in the other Situations.

To perform the Operation, where the Shoulder presents itself first, the Man-midwife must push with his Hand, the Shoulder a little back into the Matrice, that he may have a greater Facility to introduce his Hand into it; and sliding it afterwards along the Body of the Child, on the Side he'll find the Thing more easy, he'll search the Feet, to turn the Child entirely in bringing them to the Passage; after which he'll extract him, as it is done when the Child presents the Feet foremost.

If the Child presents his Back foremost, the Man-midwife must slide his Hand along the Back towards its lower Part till he has found the Feet of the Child, extracting him afterwards, as when he presents his Feet.

But when the Child comes the Buttock foremost, if he be small or of a middle Size, and the Mother tall, having the Passage pretty large, he can very well come out in that Posture, with a little Help; for tho' he has then his Body bent, the Thighs being folded towards the Belly which is softish, force their Passage over-against it, without much Difficulty. Which, notwithstanding, as soon as the Man-midwife has discover'd that the Buttock of the Child presents itself foremost, he must not suffer him to advance further, nor engage himself in that Posture into the Passage; for he might chance to remain too long there, and meet with much Difficulty before it could be disengaged from it, unless he was small, or of a middle Size, or the Passage was large, as already observ'd. He must next push back the Buttock, if he can do it without Violence; and sliding afterwards his Hand along the Thighs, as far as the Legs and Feet of the Child, he must bring them gently one after another, out of the Matrice unfolding, extending, and turning them towards the most easy Side; taking great Care to do so without any Contorsion or Dislocation; and extracting

the rest of the Body, as if the Child was to come his Feet foremost.

Note, That the Child is sometimes so far advanced into the Passage with his Buttock foremost, that it is absolutely impossible to push it back, and therefore must necessarily come into the World in that bad Situation; but to help him to it, the Man-midwife must slide one or two Fingers of each Hand on the Side of the Buttocks, to introduce them towards the Groin, as soon as he'll be capable to do it without Violence, and having bent them inwards, he must draw the Backside out as far as the Thighs; then drawing them a little obliquely on one Side and the other, he'll disengage them from the Passage, as likewise the Legs and Feet one after another, without Fracture or Dislocation, ending afterwards the Extraction of the rest of the Body, as if he was come the Feet foremost.

Note also, That a Man-midwife must take particular Care, when he extracts a Child who presents his Backside foremost, to bring him out his Face downwards; for commonly when he comes his Backside foremost, he has his Face and Feet towards the Belly of the Mother, and if he was drawn in that Manner, in a direct Line, without turning him by Degrees, in Proportion as the Extraction goes forward, the Face being thus upwards, the Chin of the Child would be fasten'd underneath the Os Pubis, and the Head stopped at the Passage, where he would soon perish.

Of a Delivery, where the Child presents the Belly, the Breast, or the Side.

The Back-bone can very well bend forward, but not backward, unless it be through an excessive Violence; therefore the worst and most dangerous Situation a Child can have in the Matrice, is that in which he presents the Belly or the Breast; for then his Body is forced to bend backward; therefore, notwithstanding all the Efforts a Woman can make, she never can make him advance to the Passage in that Situation; and is therefore in great Danger of her Life, unless she be immediately succour'd. What renders the Danger still greater, is, that the Navel-string most commonly falls out of the Matrice, when the Child presents his Belly foremost.

To prevent all the dangerous Consequences so unsafe a Labour could be attended with; the Operator, after he has placed the Woman in a convenient Situation, must run gently his Hand, well anointed with Oil or Pomatum, towards the Middle of the Breast of the Child, to turn him quite (because in that Situation he is half turned) then slide his Hand under the Belly, till he has found the Feet of the Child, which he must bring to the Passage, to draw him out in the same Manner, as if he had presented his Feet foremost.

When the Child presents the Breast, or the Belly foremost, the Man-midwife must proceed in the same Manner, in both Occasions, because they require sem- blable Circumstances.

The Child can also present himself sidewise; which is not so dangerous a Situation as the two others, because he does not die so soon. To deliver a Woman when the Child presents himself in that Situation; the Woman being placed in a convenient Posture, the Operator must push a little back the Body of the Child, that he may introduce his Hand with more Facility into the Matrice, which he shall slide along the Thighs till he has found the Legs and Feet, by which he'll turn him, and extract him afterwards.

Note, That a Man-midwife must not amuse himself in those three Sorts of Delivery, to endeavour to bring out the Child his Head foremost, since while he remains in those strange Situations, let it be ever so short a Time, he is in great Danger of dying, if he be not soon brought into the World; which cannot be done, but by bringing him out by the Feet.

Of a Labour where there are several Children, who present themselves in the different Postures heretofore mentioned.

If all the Figures and preternatural Situations heretofore described, in which the Child being alone, presents himself to come into the World, cause all the Diffi-

culties and Dangers I have mention'd, a Labour where several Children together come in those bad Situations, is still more laborious, not only for the Mother and the Child, but likewise for the Man-midwife; because they are in so uneasy a Posture, and so crouded, that they hinder one another from coming out; and then the Matrice is so much filled with them, that the Operator cannot, without much Effort, introduce his Hand into it, as he must, when it is necessary to turn the Children, or push them back, to give them another Situation than that they present themselves in.

When the Woman has two Children, they do not present themselves ordinarily both together, at the Passage to come out; for most commonly one of them is more advanced than the other; which is the Cause there is but one felt; and sometimes one does not perceive that the Woman has two Children, but when wanting to deliver her of the After-Birth, after she has been deliver'd of the first Child, the second is found coming out.

When two Children present themselves both in a bad Situation; or when but only one of them presents himself in a bad Situation, as it most commonly happens, the first coming Head foremost, and the second the Feet foremost, or in some other still worse Posture, the Operator must, as soon as possible, procure the Birth of the first, that immediately after, he may go search the second, to draw him by the Feet, without attempting to give him a natural Situation, was he even disposed to it, because he has been so much fatigued and debilitated, and likewise the Mother, during the coming out of the first, that he would be often in Danger of dying before he could come out.

Sometimes, likewise, after the first is come out naturally, the second presents himself the Head foremost. In that Case, Nature must be left to accomplish the rest, providing she be not too long about it; for the Child might chance to die, though in a natural Situation, through the Tedioufness of the Labour: And the Woman who has been much tormented to bring the first Child into the World, is commonly so fatigued, and so much discouraged, when she knows, that after she has suffer'd so much, she has done yet but half her Work, loses Courage, and is besides so much weaken'd and debilitated, that she has no more Pains, or but very small ones. Therefore, when the Man-midwife sees, that the Labour is too long, he must introduce his Hand into the Matrice, to search the Feet of the Child, to bring him out that Way; and if the Waters were not broke yet, he must make no Difficulty to lacerate the Membranes with his Fingers; and it is even better to do it soon after the first is come out, who having then made the Passage, the coming out of the second is thereby accelerated.

So soon as the Operator shall have brought the first Child into the World, he must separate him from the After-Birth, in tying and cutting the Navel String, taking afterwards the Feet of the other to bring him out in the same Manner; after which he'll draw the After-Birth to extract it with the Help of its two Navel Strings.

Note, That the Man-midwife must take particular Care not to be mistaken, when the Children present both together, the Hands or the Feet foremost, and if they be not joined together, or monstrous; as likewise which are the Parts of the one, and which are those of the other, to draw them one after another, and not both together; which can be easily discover'd, if when two or three Feet of different Children present themselves at the Passage, having took a right Foot, and a left one, and sliding his Hand along their Legs and Thighs, as far as to the Groins, if it be forward; or towards the Buttocks, if it be backwards, he finds that they are of the same Body; of which being sure, he'll begin, first, to draw by the Feet him who is further advanced; putting a little aside, to clear the Way, those of the other Child, without any Regard if he be the strongest or weakest, the biggest or smallest, dead or alive; bringing out that first, such as he is, as soon as possible, observing the same Thing as if there was but one, *i. e.* endeavouring that he should come his Breast and Face downwards, with the Circumstances mentioned in the Deliveries,

Deliveries, where the Child presents his Feet foremost; and not to draw the After-birth till after the second Child is come out; for most commonly there is but one After-birth common to both Children, which being separated from the Matrice would cause a great Flux of Blood.

Note, also, That when there are two Children in the Matrice, Nature is not regular in making one come out sooner than the other, the first or the last, as it would be more convenient, *i. e.* that if one is strong, and the other weak, the strongest comes first, as likewise when one is dead and the other alive, the live one expells the dead one; for it is sure that there is no Order in that; for the nearest to the Passage, whether it be dead or alive, the strongest or weakest, comes always the first, or must be extracted first if he could not come out of himself.

Of the Delivery where the Navel-string comes foremost.

Every Time the *Navel-string* comes out first, the Child does not always present the Belly; for though he comes out naturally, as to the Figure of the Body, *i. e.* the Head foremost, the Navel-string notwithstanding falls sometimes, and comes out first; and then the Child is in a great Danger of his Life, unless the Woman be quickly delivered, because the Blood which circulates through the Vessels which compose that String, being thereby coagulated, stops the Circulation, by reason of the Compression of those Vessels at the Passage. For if those Vessels be not exactly compressed, but there be some Interval left to let the Blood flow, the Child may live, though the Navel-string has been out for several Hours.

In feeling the Navel-string, one may easily know if the Child be alive or dead in the Matrice; for if he be alive, the Umbilick is warm, big, full of Blood, and pretty firm, and the Pulsation of the Arteries is felt in it: But when he is dead, that String is commonly empty, flabby, shrivelled, small, cold, and no Pulsation is felt in it.

Women, whose Children have much Water, and the Navel-string very long, are very subject to this Accident; for those Waters flowing in great Abundance, at the Time the Membranes break, carry off along with them that String which floated in them, and the easier because the Head is not yet far advanced in the Passage, to hinder it from falling; and often likewise, the Navel-string falls out of the Matrice, when the Child comes in a preternatural Posture, because he cannot easily descend into the Passage when he is in a bad Situation; for the Parts he presents then foremost not filling up exactly the whole Entrance of the Matrice, because of their Inequality, there most commonly remains some Vacuity, through which the Navel-string slides.

To remedy that Accident, and prevent if possible, the fatal Consequences it is attended with, the Patient must be kept in her Bed very warm, and the Navel-string immediately put back into the Matrice to hinder it from cooling, endeavouring to thrust it quite behind the Head of the Child, if the Head presents itself foremost, lest it should be pressed and confused by it, and the Motion of the Blood intercepted; keeping it fast, by means of the Ends of the Fingers of one Hand, in the Place whereinto it has been pushed, keeping always those Fingers on the Side it comes out at, till the Head be entirely come down and lodged at the Passage, can hinder it from falling another Time, taking the Occasion of a good Pain, to bring it to it with more Facility; or if the Operator draws out his Hand, he must thrust a small Piece of very soft Linnen between the Side of the Head and the Matrice, to stop the Place through which the String could fall, observing to let one End of that Linnen hanging out, that it may be extracted when it is judged proper; putting likewise a Compress dipped in hot Wine, before the Entrance of the Matrice, to hinder the Navel-string from cooling, in case it was to fall again.

But, notwithstanding all those Precautions, it happens sometimes, that the Navel-string falls at every Pain, which the Woman takes: In which Case the Operation ought not to be deferred, but the Child must

be extracted as soon as possible by the Feet, which the Man-midwife must go to search, was even the Head to present itself first, since there is but that sole Remedy which can save his Life.

Therefore having placed the Woman in a commodious Situation, he must push back gently the Head of the Child, which presents itself first, if it be not too far advanced between the Bones of the Passage, and he can do it without tormenting the Woman too much (in which Case it is best to leave the Child in Danger of his Life than to expose that of the Mother). Afterwards he'll slide his Hand (well anointed with Oil or Pomatum) under the Breast and Belly of the Child to search his Feet, by which he'll draw him out.

Of a Delivery where the After-birth presents itself foremost, or is entirely come out before the Child.

The coming out of the After-birth before the Child, is still much more dangerous, than the coming out of the Navel-string: For besides, that the Child most commonly dies then, if he be not succoured, almost at the same Instant; the Mother herself is also very often in Danger of her Life, by reason of the great Loss of Blood, which commonly happens when the After-birth is separated from the Matrice, before the Time appointed by Nature, because it leaves open all the Orifices of the Vessels to which it was adherent, from which the Blood flows in Abundance, and without Discontinuation, till the Child be out of the Matrice; for while he remains in it, it makes continually some Efforts to expell him, by means whereof it continually squeezes the Blood out of the Vessels. Therefore if one must be diligent to succour the Child when the Navel-string comes out first, he must be still more quick to do it when the After-birth is quite out of the Matrice, since a Delay in that Case, let it be ever so little, causes always the immediate Death of the Child, if he be not soon brought into the World, for then he cannot remain long without being suffocated, because he wants Respiration through the Mouth, as soon as his Blood is no longer vivified by its Preparation in the After-birth, whose Functions and Uses cease as soon as it is separated from the Vessels of the Matrice to which it was joined; which occasions immediately that great Flooding, which proves so dangerous to the Mother, that if it be not quickly remedied she soon loses her Life.

When the After-birth presents itself thus first at the Passage, nothing is felt but a soft Body, without any solid Part; and the Blood flows in Abundance from the Matrice with several Clods, the Woman fainting away often.—In that deplorable Case, the Operator must make Hasten to deliver the Woman, if he will save her Life, and that of her Child, if he be yet alive. Therefore, if the After-birth only presents itself first, without being quite out, and the Waters be not yet broken, as it sometimes happens, he must put a little aside that Part of the After-birth which presents itself first, till he be over-against its Membranes, which he must break with his Fingers, for the immediate Evacuation of the Waters, and at the same Time to turn the Child, in case he should present himself in another Posture but the Feet foremost, by which he must immediately draw him out: For it must be observed, that though the After-birth which thus presents itself first, be but a foreign Body in the Matrice, when entirely separated from it, as it is then; for which Reason one would think that it should be extracted before the Child; notwithstanding as it is strongly fastened to the Membranes it is environed with, such a Thing could not easily be done; because the After-birth could not be easily extracted, without extracting at the same Time the Membranes which envelope the Body of the Child; besides that those Membranes, which line the whole Inside of the Matrice, serve, by their polished and slippery Substance, to the easier turning of the Child, and to hinder the Matrice, by their Interposition, from being hurt in the Operation; which would not succeed so well, if the After-birth was extracted first.—But if the Operator was to find that the After birth is almost quite out of the Matrice, and the Membranes thereof entirely broken, or lacerated, in that Case he must extract it quite; for besides that it would be needless to thrust it back into

the Matrice, it would be very troublesome to the Man-midwife during the Operation, and hinder him from giving an immediate Succour to the Child.

If the After-birth, which is almost quite out of the Matrice, and whose Membranes are broken, is not to be put back, much less that which is quite out. For all that is to be observed then, is that the Operator ought not to amuse himself to tie and cut the Navel-string before the Child be extracted likewise, who is then always in Danger of his Life; as likewise to stop as soon as possible the Flooding of the Mother, which ceases as soon as she is delivered.

Of a Delivery accompanied with a great Loss of Blood, or, with Convulsions.

Whether a pregnant Woman be at Term or not, the most efficacious Remedy for a great Loss of Blood, to save the Life both of the Mother and of her Child, is to deliver her quickly, in searching the Feet of the Child to draw him out.—But when the Loss of Blood is but small, and the Woman has Strength enough to bear it, the Delivery must be left to Nature; provided the Woman's Pains be strong enough, to give Room to hope, that she may be delivered in that Manner. Notwithstanding which, if at the Time the Flooding begins, the Membranes of the Waters of the Child were not broken yet, they must be broke as soon as the Matrice is a little dilated, without waiting for those Membranes breaking of themselves: For as the Losses of Blood which exceed a Mediocrity, proceed always from a Separation of the After-birth from the Matrice, if those Membranes are left whole, as they are fastened on all Sides to the After-birth, they would cause a still greater Separation, being agitated and pushed forward at the Time of the Pains of the Women; but being broken, they give Room to the Child to advance forward into the Passage, through their Laceration, without pulling hard, as they did before, on the After-birth.

The Convulsion, is no less dangerous to the Woman in Labour, and to her Child, than the Loss of Blood, unless she be quickly delivered, which is also the best Remedy in that Case. But the Matrice sometimes being not sufficiently open when the Convulsion happens, one must have Recourse to common Remedies, which are bleeding in the Arm, and even in the Foot (if the Convulsion does not proceed from Loss of Blood) to provoke sneezing, and giving her from Time to Time pretty strong Glysters, in order to excite Pains for the Dilatation of the Matrice, which must be humected likewise, with reiterated emollient Fomentations.

Note, That the Convulsions proceed most commonly from these three Causes, viz. either from a too violent Agitation of the Spirits, which crowding with a too great Impetuosity through the Nerves, during a very laborious Labour, intercept by Intervals, their own Circulation; or by reason of the great Quantity of Blood evacuated by an excessive Flooding; or, as it often happens in the first Labour, by the violent Pains the Matrice suffers in its first Dilatation; I would not advise a Man-midwife to prescribe to his Patient any violent Remedy, as Emeticks, strong Catharticks, or Sternutatories, which, instead of appeasing those dangerous Symptoms, serve rather to increase them; for if the Convulsions proceed from a too violent Agitation of the Spirits, I would rather endeavour to calm them with some Drops of Laudanum, administered inwardly, or some Glasses of Emulsions; which can serve not only to appease the too great Agitation of the Spirits, but likewise to cool the Blood, and repair the exhausted Strength of the Woman, by procuring her a gentle Sleep, or by applying outwardly on her Forehead, a Dissolution of Opium; the same Remedy is also of great Service when the Convulsions proceed from a great Loss of Blood. If they be caused by the great Pains occasioned by the extreme Distention of the Matrice, the Man-midwife must with his Finger, and some Embrocations, facilitate the Dilatation thereof, that he may as soon as possible deliver the poor Woman of her Burthen, otherwise the violent Efforts caused by other Remedies, would occasion a mortal Laceration of the proper Substance of the Matrice.

Therefore since a quick Delivery is the most salutary Remedy in that dangerous Case, the Man-midwife must procure it as soon as possible; which should be done in the following Manner.

If the Child be supposed alive, though he presents himself in a natural Posture, the Operator must turn him entirely in the Matrice, to draw him out by the Feet, after having broke the Membranes of the Waters, if they were not broke already.

If on the contrary the Child is known to be dead, and his Head is too strongly engaged in the Passage, the Operator must make no Difficulty to draw him with the Hook.

Note, That there are certain Women, who are never delivered without falling in Convulsions, either before or after their Delivery. To avoid and prevent so dangerous an Accident, those Sorts of Women must be let Blood twice or three Times during their Pregnancy, and likewise at the Beginning of their Labour, in order to diminish the Quantity of Blood of which their Vessels are too full, and which is the Cause in Part of the Convulsions, by flowing to the Head, by reason of the excessive Pains a Labour is attended with.

Note, also, That when a Woman does not recover her Senses when the Convulsion is over; but on the contrary remains stupified, foams at the Mouth, and snoars very loud, she most commonly dies with her Child, unless they be both quickly succoured by the Delivery; which Remedy is not notwithstanding infallible.

How to deliver a Woman when the Child is hydropical, or monstrous.

A Child can be hydropical in the Matrice, either of his Head, or of his Breast, or of his Belly; and if those Parts are so full of Water, as to be much bigger than the Passage is wide, through which the Child is to come out; then whatever Efforts the Woman can make to push him out, she can never do it without Succour; as likewise if he is monstrously big, either of his whole Body, or only of some Part thereof, or by being joined to another Child.

If the hydropical Child be alive at the Time of the Delivery, his Life cannot be saved; for to save that of his Mother, his Head must be pierced, or his Breast, or his Belly, i. e. that Part where the Water is contained, to procure the Evacuation thereof, without which he could not be extracted, and remaining in the Matrice, would kill his Mother: Therefore to save her Life, it is absolutely necessary to extract the Child by Art, which is done in the following Manner.

The Woman being placed in a convenient Situation, the Operator shall introduce gently, his Left-Hand into the Matrice opposite to the Head of the Child, if the Water be contained in it, and with the Right slide along the Left a bowed Knife, and sharp at its Extremity (which Extremity must be turned towards the Inside of the Hand for Fear of wounding the Matrice) and having guided it as far as to some of the Sutures of the Head, which are then very loose, he'll turn it towards those Sutures, and make an Aperture for the Evacuation of the Waters; which done, he'll meet with no more Difficulty in the Extraction of the Child, because his other Parts are then most commonly very slim. If those Waters were in the Breast or in the Belly, as the Head then is not big out of Measure, it could easily come out of the Matrice without the rest of the Body, which is extremely tumified by those Waters; in which Case the Operator must slide his Left Hand, and the Instrument with his Right, as far as the Belly, or the Breast of the Child, to open it for the Evacuation of the Waters; after which the Operation will be ended without Pain.

Note, That it is much more difficult to draw a monstrous big Child, or joined to another, out of the Matrice, than one who is hydropical, because the Bigness of the hydropical Parts, is easily diminished by a single Aperture, which is capable to evacuate the Waters which make the Distention thereof; after which

which the rest of the Operation is very easy; but when a large monstrous Child, or joined to another is to be extracted, a single Aperture avails nothing, for it is sometimes necessary to separate whole Members from that Body, which renders the Thing much more difficult and laborious, and wants a very dexterous Hand. In this Case the Left-Hand must be introduced into the Matrice, and the bowed Knife with the Right, as far as to the Parts which are to be separated, cutting them at their Articulation; and if there are two Children joined together, they must likewise be separated at the Place where they are joined; which done, they'll be extracted one after another, and always by the Feet, if possible.

Of the Extraction of a dead Child.

When the Child is dead in the Womb, the Delivery is almost always very long, and very laborious; because his Body having no more Support, and being grown quite flabby, his Parts fall on one another, which does, that he most commonly comes in a bad Situation; and though he presents himself in a natural Posture, the Head foremost, the Pains of the Woman are so weak and so slow, on that Occasion, that they cannot cause the Expulsion of the Child; and sometimes she has none at all; because Nature half exhausted by the Death of the Child, who cannot help her, works so little, that often she cannot end the Work she has begun; and would infallibly fall under her Burthen if she was not assisted by Art.

But, however, before the Man-midwife undertakes the Operation, he must endeavour to excite some Labour Pains, by Means of strong Glysters, to facilitate the Expulsion of the Child, if he be in a good Situation; but if those Remedies have no Effect, he must proceed to the Extraction of the Child, which is the surest Means; for all the other Remedies taken inwardly, and prescribed by some Physicians, to facilitate the Expulsion of a dead Child out of the Matrice, being commonly very hot, and Purgatives, can cause afterwards very dangerous Accidents, as a Fever, Looseness, Dysentery, Loss of Blood, Relaxations, and bearing down of the Matrice.

Note, That all Authors forbid the Extraction of a dead Child, when there is Inflammation of the Matrice, and order, in that Case to humect it with emollient Fomentations, and half Baths, and with Embrocations of Oil, often reiterated, to appease the Inflammation, before the dead Child be extracted: But it is entirely impossible the Inflammation should diminish, while the dead Child, which is the true Cause thereof, remains in the Matrice. Therefore so soon as the Operator finds Room to introduce his Hand into it, he must extract the Child without Delay; which is the only Means to appease the Inflammation; for if the Operation was deferred, the Inflammation would still increase more, and cause at last the Gangrene in the Part, after which there would be no more Hope of saving the Woman's Life.

The Extraction of a dead Child is made, by pushing back the Head of the Child (if it comes foremost, and is not too much engaged in the Passage) into the Matrice, that the Operator may have the Liberty to introduce his right Hand into it, sliding it under the Belly of the Child, to search his Feet, in order to turn and draw him in the Manner abovemention'd; taking great Care that the Head should not be stopped, nor separated from the Body at the Passage.

But if the Head of the Child was so much engaged in the Passage, that it could not be pushed back, then the Operator, if he be very sure that he is dead, shall extract him in that Posture, by Means of a Hook, which he must push as far as possible, without Violence, between the Matrice and the Head of the Child, guiding it along the Inside of one of his Hands, its Point turned towards the Head, which he'll hook in, by fixing it, if possible, on the Skull; in such a Manner, that it may not slip, or part from its Hold. This Hook being thus well fasten'd to the Head, he must draw it out, placing the Extremity of the Fingers of his left Hand on the Side opposite to the Hook, to help to disengage it better,

in shaking it a little by Degrees, and to guide it more directly out of the Passage; using then, if it be necessary, a second Hook, in the same Manner as the first, and placing it on the opposite Side of the Head, that the Extraction be made equally on both Sides.

It would be better if the Hook could be pushed at once so far as to give it a sufficient Hold, to extract entirely the Head of the Child; but as there is often no Room to introduce it farther than the Middle of the Head, it must be hooked in first, in the Manner abovemention'd, on the Middle of one of the parietal Bones, to give it a firm and stable Hold; and when by this first Hooking, the Operator has drawn the Head a little out, and began to disengage it, then he'll draw the Hook out of that first Hole, to put it farther in, and thus successively taking it out, and putting it in again, till he has entirely brought out the Head, after which, drawing it immediately with his Hands only, he'll make the Shoulders enter the Passage, sliding, if it be necessary, one or two Fingers of each Hand, as far as under the Arms, to draw by that Means the Child entirely out. This done, he'll proceed to the Extraction of the After-Birth, in the Manner heretofore so often mentioned. But the Extraction of a dead Child is made with a still greater Facility, by Means of an Instrument of the Invention of the famous M. *Mauriceau*, which he calls *Head Screw*; of which hereafter.

Note, That before the Operator attempts the Extraction of a dead Child, who presents his Head foremost, he must take particular Care, that the Head be in a good Situation; for if it was sidewise, it would be much more difficult to draw it in the Manner abovementioned, because the Head of a dead Child, which is very flabby, being longer than broad, its Length is converted into Breadth and Bigness, when it is not in a direct Line in the Passage; which hinders it from coming out. He must take Care, likewise, to draw it whole, as much as possible, and not in Pieces, that by its coming out thus, it may make the Passage for the rest of the Body; and for several other very important Reasons heretofore mentioned.

But if the dead Child was to present an Arm as far as the Shoulder, and so much swelled and tumefied, that it could not be pushed back into the Matrice, without hurting much the Woman, it must be separated from the Body, by twisting it three or four Times, as already described; whereby occupying no longer the Passage, the Operator will have more Room to introduce his Hand into the Matrice, to fetch the Feet of the Child, to extract him by them; observing always, when he has made the Extraction of a dead Child, to re-assemble into one all the Parts he has separated, to see if he can compose a whole Body of them, and discover thereby if nothing remains in the Matrice.

Note, That tho' a Man-midwife be sure that the Child is dead in the Matrice, and that it is necessary to make the Extraction thereof by Art; he ought not, notwithstanding, use always at first his Hooks, or any other Instruments; which are never to be employed but when the Hands are not sufficient, and the Child is not to be extracted otherwise, to save the Woman from the Danger she is in; for though, very often, he has done all that the Art prescribes, Persons who know nothing of the Matter, believe that, with his Instruments, he has kill'd the Child; and is even the Cause of the Death of the Mother, if she was to die in her Lying-in. — He must, likewise, if possible, extract the Child whole, and not in Pieces; though he must always act on these Occasions according to his Conscience and Knowledge, without minding what People can say. These salutary Advices are only for Men-midwives, who have generally more Knowledge than Fortune, and whose Conduct, let it be ever so regular, is exposed to the Censure of every illiterate Fellow, and ignorant, tattling Woman; but not for those *Assassins en Houffe*, to whom that Jilt, Dame Fortune, has given the Privilege to kill *impuni per totam terram*.

How to extract a Mole, and a false Conception.

For the Extraction of a Mole, after the Man-midwife has placed the Woman in the same Posture, as if it was for the Extraction of a dead Child, he must slide his Hand into the Matrice, if it be sufficiently dilated, to draw out the Mole, using, if it be so big that it cannot pass whole, of a Hook or Knife, to extract it, or divide it in two, or several Parts, according as the Necessity requires it. — If the Operator find it adherent to the Matrice, he must separate it from it gently, with the End of his Fingers, thrusting them by Degrees, between the Mole and the Matrice, beginning at the End which is not so adherent, and continuing thus till it be entirely separated; taking great Care, if it be much adherent, not to lacerate the proper Substance of the Matrice; using the same Precautions then as in the Extraction of the After-Birth, when the Navel-string has parted from it.

If the Mole cannot be extracted in the Manner above-mentioned, the Expulsion thereof must be procured by some Purgatives, if the Woman has no Fever, nor Loss of Blood; and when the Remedy begins to operate, she must take a pretty strong Glyster; which shall be reiterated, as often as it will be judged necessary to excite thereby Pains capable to cause the Dilatation of the Matrice, which ought to be humected often with emollient Embrocations of Oil or Grease.

By means of these Remedies, the Mole will be expelled out of the Matrice, provided it be not too big, nor too adherent to it.

Note, That the Mole has no Navel-string affixed to it; nor likewise any After-Birth for its Subsistence, but is fed immediately from the Vessels of the Matrice, to which it is almost always adherent, and joined in some Place. The Substance of its Flesh is also much more hard than that of the After-Birth, and even sometimes scyrrhus; wherefore it is much more difficult to separate it from the Matrice; even sometimes the Substance of the Mole and that of the Matrice, are so confused together, that they both compose but one and the same Body; whereby the Malady is render'd incurable; for as that Sort of Mole can be neither expelled, nor extracted out of the Matrice, it always increases in Bulk, till it kills the Woman at last.

As to the *false Conception*, though it be much smaller than the Mole, it notwithstanding puts often the Woman in Danger of her Life, because of the great Loss of Blood it is almost always attended with, when the Matrice endeavours to expel it, which seldom ceases till after it is come out; because it makes continually new Efforts to force it out, whereby the Blood is excited to flow, and as it were squeez'd out of the Vessels.

I have never found a more specifick Remedy to help the Matrice, in the Expulsion of a false Conception, than the Oil of Cinnamon, and of Gujacum, of each six Drops, taken in an Ounce of Water of Parietary; which is a Remedy of my own Invention, and which has never fail'd of Success; though I have prescribed it to Women who had Sincops through an excessive Loss of Blood.

But if a Man-midwife wants to extract the *false Conception*, with his Hand, after he has well anointed it with Oil, he must slide it into the Vagina, as far as to the inward Orifice of the Matrice; which he'll find sometimes very little dilated; then he'll introduce gently into it one of his Fingers, turning immediately and bending it from one Side to the other, till he has found means to slide a second, and afterwards a third, or more, if he can do it without Violence; though sometimes it is with the greatest Difficulty, he can introduce only two. This done, he'll take between his two Fingers the *false Conception*, drawing it gently out, together with the Clods of Blood, he could meet with; after which the Loss of Blood will cease infallibly, unless he was to leave behind some Portion of that foreign Body; which he has done if the Flooding continues.

But if the inward Orifice of the Matrice could not be dilated, but for the Introduction of a single Finger, and that with great Difficulty; the Operator having introduced into it, the Index of the right Hand, as far as he is able, without Violence, he'll turn it gently around

the false Conception to loosen it from the Matrice, that it may be expelled from it as soon possible; or that being thereby mortified, it may be dissolved by Degrees into Suppuration afterwards; for Losses of Blood, caused by simple false Conceptions, have been often stopped, as soon as those foreign Bodies had no more Communication of Life with the Matrice, as it happens at the very Instant they are no longer adherent to it.

But if notwithstanding all these Precautions, the Flooding should continue, with that Violence as to put the Woman in Danger of her Life, then the Operator having introduced the Index of his left Hand into the Matrice, must take with his right a Kind of Pinchers, made for the Purpose, called *Tenette*, the End whereof he'll slide along his Finger, to draw out, with that Instrument, the foreign Body which is in the Matrice, taking particular Care not to pinch the Matrice; and observing that the Instrument should always be guided by the Finger introduced first; which by its feeling, will make the Operator distinguish the foreign Body from the Substance of the Matrice.

Note, That a Man-midwife, in making the Extraction of the *false Conception*, in the Manner above-mention'd, must take Care that the Portion of the foreign Body first laid hold of, should not part from the rest; which would certainly happen, if he was to pull too hard at first; for it is most commonly the most fragile, and softest Part thereof which presents itself at the inward Orifice to come out. Therefore having laid hold of it with his Fingers, he must draw it out gently, and a little obliquely from one Side to the other; endeavouring always, by preserving that first Hold without breaking, to get one higher, in Proportion as the foreign Body is made to advance further, till it be entirely extracted; the Woman helping towards it all the while, by stopping her Breath, and pushing hard downwards.

Note also, That the Operator must take great Care not to be mistaken in these Cases, and thinking to procure the Expulsion of a Mole, or of a false Conception, cause a true Abortion, as some ignorant Men-midwives have often done.

Note besides, That having thus treated in an ample Manner, both of the natural Delivery, and of those against Nature, or preternatural; and instructed my Pupil Midwives and Men-midwives, of all the best Means to help a Woman in the first, and to remedy to all the others, according to the different Occasions which can occur; I must proceed to inform them, likewise, *Of the Maladies and Symptoms which happen to Women during their lying in; how to treat Children newly born; of their most common Maladies; and of the Conditions requisite in the Choice of wet Nurses, as they are called in England. Beginning by what is to be done to a Woman as soon as she is deliver'd, in a natural Delivery.*

So soon as the Woman has been deliver'd of her After-Birth, the Midwife must take great Care that its Separation be not followed by a too great Loss of Blood; and place before the Entrance of the Matrice a pretty soft Cloth, folded into five or six Doubles, lest the cold Air penetrating into it, should stop the Evacuation of the Lochia, by a too sudden Obstruction of the Vessels; the Suppression whereof would be unavoidably attended with very dangerous Accidents, as excessive Pains, and Gripings in the Belly, Inflammation of the Matrice, a Fever, Pleurisy, and several others, which I design to mention hereafter; and not unlikely Death itself.

The Entrance of the Matrice being thus well stopped, if the Woman has not been deliver'd in her Bed, she must be immediately carried into it, unless there was a Flooding, as it happens sometimes, for then she should be left above a Quarter of an Hour, in the Place where she has been deliver'd, lest by moving her so soon, the Loss of Blood should increase; which, on the contrary, is moderated, by the Air, which introduces itself into the Matrice; while other Remedies are administer'd to the same Purpose. But if there be no Fear of that Accident, the Woman must be carried to her Bed, by one or two Persons, rather than be suffer'd to walk to it; though if there was some Part of the After-Birth left behind,